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# State and Local Ratio Studies, Property Tax Assessment, and Transfer Taxes

State and Local  
Government  
Special Studies  
No. 99



U.S. Department of Commerce  
BUREAU OF THE CENSUS





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Issued October 1980



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#### **ACKNOWLEDGMENTS**

The preparation of this report was made possible only by the cooperation of the many State and local assessing officials who supplied the basic data. Their generous assistance is greatly appreciated.

This report was completed in the Governments Division by the Taxation Branch, headed by **John O. Behrens**, who supervised the work and wrote the text, under the general direction of **John R. Coleman**, Assistant Division Chief for Economic Statistics. **William C. Hulcher** and **John R. Kennedy** provided the operational and technical management necessary for obtaining and tabulating the data, with assistance from **Karen Collins**, **Lucy Mimm**, and **Pamela Byrd**.

Publications Services Division provided advice and service in preparation of copy for publication. Publication copy was prepared in the Governments Division under the supervision of **Corrine Davis**.

Library of Congress Catalog Card Number: 75-60080

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#### **SUGGESTED CITATION**

U.S. Bureau of the Census, State and Local Ratio Studies, Property  
Tax Assessment, and Transfer Taxes, Series GSS No. 99,  
U.S. Government Printing Office, Washington, D.C., 1980

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For sale by the Superintendent of Documents, Government Printing Office  
Washington, D.C. 20402.

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# INTRODUCTION

This study reports on what State and various local governments do in order to discover actual assessment levels and the uniformity exhibited by individual assessed values. The activity involved is called an assessment ratio study. It is a systematic attempt, undertaken within the requirements of statistical principles, to compare the assessed values of individual properties with the actual worth of those properties in the market, as evidenced by bona fide measurable sales, or by professional appraisals.

A ratio study occurs because the government conducting it needs to know for some reason, what the assessed values represent in terms of a common level, market value. It may be that the tax base is the means through which State aid is apportioned. It may instead be a need to correct inequitable assessments, individually or as part of a jurisdictionwide reassessment.

The need, in any case, exists only because it has not been common for the assessing process, by itself, to yield a uniform set of values at the statutory level. That assessing process and its environment receive attention below, as a necessary preface to what our survey revealed.

## THE PRESENT ASSESSING ENVIRONMENT

### Property taxes now and tomorrow

Assessing is the measurement function necessary for property taxation, still a mainstay for local governments. In calendar 1979, State and local property taxes accounted for \$65.5 billion, or 31 percent of all tax revenue, as table A indicates. The portion comprising State property taxes is very small, just under \$2.7 billion in 1979, or 2 percent of all State tax revenue. Local property taxes, on the other hand, remain substantial, despite

Proposition 13, and despite the continuing growth of intergovernmental revenue in local treasuries. Local property taxes increased by 31 percent in 5 years to \$63 billion in 1979, less than the 48 percent increase registered between 1969 and 1974, but still comprising more than three-fourths of all local tax revenue. In proportionate terms, the 1979 local yield reflected a decline of 8 points from an 86 percent share of local taxes 10 years earlier. Over the same period State and local property taxes together increased by 95 percent but decreased proportionally from 41 percent to 31 percent of all taxes.

Thus, property taxes remain important, but in a decidedly changed structural pattern, now likely to be characterized by trilevel participation. In fiscal 1969 local governments obtained 85 percent of tax revenue, or 41 percent of all general revenue, from property taxes. Another 36 percent of general revenue came from intergovernmental, largely State, sources. Ten years later the intergovernmental share had increased to 45 percent, while property taxes accounted for only 30 percent of general revenue. Moreover, direct Federal fiscal aid to local governments, which had been only 3 percent of general revenue, climbed to a tenth of the total in fiscal 1979. Details of the new fiscal landscape are apparent in table B.

State assistance to localities is dual in nature. Direct financial participation coexists with State-provided technical service and supervision. So it is with assessment ratio studies, now a regular activity in 42 States, plus the District of Columbia. Though Puerto Rico does not presently conduct ratio studies on a regular basis, legislation there, when fully implemented, would make possible the assembly of the necessary sales data for these studies. The Territory of the U.S. Virgin Islands has been conducting informal ratio studies for approximately 5 years. Its current effort, dealing with sales for a 3-year period, incorporates the use of computers for the first time.

Table A. Tax Revenue, State and Local Governments, Calendar Years 1969, 1974, and 1979

(Amounts in millions of dollars)

Item	State and local governments			State governments only			Local governments only		
	1969	1974	1979	1969	1974	1979	1969	1974	1979
Total, all tax revenue . . . . .	82,826	135,457	211,273	45,059	77,398	130,329	37,767	58,059	80,944
Property taxes only . . . . .	33,556	49,426	65,546	1,073	1,366	2,670	32,483	48,060	62,876
Percent of total . . . . .	40.5	36.5	31.0	2.4	1.8	2.0	86.0	82.8	77.7

Source: Adapted from material compiled for *Quarterly Summary of State and Local Tax Revenue*, issues covering October-December 1969 (GT69, No. 4, March 1970), October-December 1974 (GT74, No. 4, April 1975), and October-December 1979 (GT79, No. 4, April 1980), U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

Table B. Revenue Relationships, State and Local Governments: 1968-69 and 1978-79

(Amounts in millions of dollars)

Item	State and local governments				State governments only				Local governments only			
	1968-69		1978-79		1968-69		1978-79		1968-69		1978-79	
	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent	Amount	Per-cent
Total general revenue. . . . .	114,550	100.0	343,327	100.0	67,312	100.0	208,037	100.0	71,943	100.0	211,887	100.0
Intergovernmental revenue. . . . .	19,153	16.7	75,144	21.9	17,775	26.4	57,077	27.4	26,082	36.3	94,663	44.7
From U.S. Government . . . . .	19,153	16.7	75,144	21.9	16,907	25.1	54,542	26.2	2,245	3.1	20,602	9.7
From State governments . . . . .	—	—	—	—	—	—	—	—	23,837	33.1	74,062	35.0
From local governments . . . . .	—	—	—	—	868	1.3	2,535	1.2	—	—	—	—
Tax revenue:												
Total . . . . .	76,712	67.0	205,556	59.9	41,931	62.3	124,962	60.1	34,781	48.3	80,594	38.0
Property taxes. . . . .	30,673	26.8	64,930	18.9	981	1.5	2,490	1.2	29,692	41.3	62,440	29.5

Note: Duplicative transactions between levels of government are excluded.

Source: Adapted from material in *Governmental Finances in 1968-69*, GF69, No. 5, September 1970, and *Preliminary Data on State and Local Government Finances in 1978-79*, GF79, No. 5P, August 1980, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

—Represents zero or rounds to zero.

### Assessing: fundamentals and functionaries

In its essence, assessing is officially valuing property for purposes of taxation. Because it is necessarily comprehensive, in that *all* taxable property must be valued, the assessing function implies at least three-fold activity: discovery of all taxable property, regardless of the effort required to find it; listing, or systematically accounting for all taxable property in some written form; and valuation, or officially expressing in money the worth of each taxable property, usually in terms of its "highest and best use," as of the date and at the value level prescribed by State law. That level is market value or a specified percentage thereof in 37 States.<sup>1</sup> In 11 others, State law specifies, statewide or for jurisdictions affected, two or more classes, each of which is subject to assessment at a separately specified percentage of market value. The District of Columbia, Massachusetts, and West Virginia provide one value level, and classify by rate instead.

Reference to legal standards based fundamentally on a common denominator, market value, suggests that State law prescribes uniformity among *all* assessed values, or only such departures from uniformity as legal classification provides. The implicit suggestion is important, for actual uniformity among all individual values is a critical prerequisite to use of such values as the basis for directly calculating either individual tax burdens or jurisdictionwide entitlements to State aid allotments related to assessed value.

Because de facto assessed values, however, may or may not reflect the value levels prescribed by State law, ratio studies have come into use as the means through which a governmental agency, or some other entity, can draw an informed conclusion

about how de facto assessed values, individually or in the aggregate, relate to the prescribed level or levels.

Conclusions about aggregates are necessary for State officials who distribute State aid on the basis of relative property-measured wealth among counties, cities, and towns. If that basis is not expressed in terms of a common level for all aided jurisdictions, it can hardly serve as an equitable criterion. Thus, counties A, B, and C, with sales price-oriented assessment levels of 60 percent, 30 percent, and 20 percent, respectively, can equitably receive assessed value-based, proportionately equal shares of a State support grant only if their respective assessed value aggregates are converted to a common level of value. That conversion is the equalization process that ratio studies make possible.

The same sort of equalizing process applied to differences among *individual* assessed values is usually called assessment review. An example is the situation where houses X and Y, each recently sold for \$100,000, are discovered to have assessed values of \$30,000 and \$60,000, respectively, in a county where the legal standard is full market value. Each house is under-assessed, but not uniformly so. Other things being equal, house Y has a tax bill twice that of house X, for no good reason. In any review, the assessed value of house Y should be reduced, or the assessed value of house X increased, or perhaps both changes should occur. What actually happens may well hinge on whether the county conducts ratio studies itself, or uses county-related results of the State's ratio study. Either alternative depends, even more basically, on whether results of ratio studies are in fact available to the appeals process. If they are not, an aggrieved taxpayer will need to present externally assembled evidence showing the same inequitable situation. Just citing the legal standard will probably not suffice for relief, since each house has an assessed value that is too low by that criterion.

<sup>1</sup> See appendices A, B, and C.



The official who performs the assessing function is, in many States, known as the "assessor," though several titles now describe the job, which is also variable as to appointment or election. In Washington, D.C., overall responsibility lies with the Director of Finance and Revenue, an appointee of the Mayor. Florida a few years ago adopted the title "property appraiser" for each county assessor, an elected official. Illinois has assessors in some townships and counties, supervisors of assessment in others. Kentucky calls each county assessor a "property valuation administrator," an appointed official.

In Maryland, where the State administers the function, a supervisor of assessments is appointed for each county. Montana also has State administration, with each elected county assessor an agent of the State. Ohio, on the other hand, places the responsibility in each county with the "county auditor," also an elected official. In Vermont the assessor is the "lister," an official of the town government.

County assessors are elected in Texas, but each also performs the tax collecting function and is known as "assessor-collector." That State, incidentally, has a profusion of assessors. Each independent school district assessor and city assessor administers a jurisdiction that overlaps territory in one or more counties. In some situations the same person by contract performs the function in the school district and city. Each taxable property in Texas is likely to have three separate assessed values, each at a different value level. The beginnings of organizational change are now in place, however, under 1979 legislation, to be fully implemented by January 1, 1982, establishing an "appraisal district" in each county and coterminous with it. Each taxing unit within all or part of the county, including the county government itself may, by its own vote, elect to have the appraisal district perform the appraisal function for ad valorem tax purposes. Implementation of the new law remains an imponderable at this time.

Whatever the title of the official may be, the basic assessing unit is called the *primary assessing jurisdiction*. This is defined as one of the contiguous territories (counties, or other equivalent units) which together occupy the entire area of the State, with each of such units having initial responsibility for determining the tax base for general property taxes levied by local governments and, where applicable, by the State government. In 1979 there were 13,439 such jurisdictions, as shown by State in table 1. The number has declined during the last 40 years, as table C makes evident. Maryland and Montana are shown in table 1 as having one jurisdiction each, since administration is statewide.<sup>2</sup> The same is still true for Hawaii, though in that

State assessing becomes a county function, effective July 1, 1981.<sup>3</sup>

**Table C. Number of Primary Assessing Jurisdictions,  
by Type of Government  
Years Indicated**

Type of government	1940 <sup>1</sup>	1965 <sup>1</sup>	1974 <sup>1</sup>	1979 <sup>1</sup>
All types . . . . .	26,304	14,496	13,516	13,439
Counties <sup>2</sup> . . . . .	1,956	2,512	2,555	2,473
Municipalities <sup>3</sup> . . . . .	4,313	2,028	1,968	1,829
Townships <sup>4</sup> . . . . .	17,625	9,953	8,991	9,133
Other <sup>5</sup> . . . . .	2,410	3	2	4

<sup>1</sup>Source for 1940 data (48 States): *Assessment Organization and Personnel*, National (now International) Association of Assessing Officers, Chicago, Illinois, August 1941, page 38.

Source for 1965 data: *Primary Assessing Areas for Local Property Taxation*, State and Local Government Special Study No. 50, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., April 1966, page 6.

Source for 1974 data: *State and Local Ratio Studies and Property Assessment*, State and Local Government Special Studies, No. 72, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., August 1975, table B, page 3.

Source for 1979 data: Table 1.

<sup>2</sup>Includes county-equivalent cities, or city-county consolidations; parishes in Louisiana; boroughs in Alaska (1965, 1974, and 1979).

<sup>3</sup>Includes city-equivalent towns, villages, and boroughs, as in Connecticut, New Jersey, North Dakota, South Dakota, and Wisconsin.

<sup>4</sup>Includes towns in New England States.

<sup>5</sup>For 1940 includes 859 city wards; 439 school and civil districts; 1,112 unorganized areas.

Note that primary assessing jurisdictions are those with initial responsibility for the assessing function. A summary under this definition thus includes, in the States affected, individual jurisdictions subject to a degree of supervision and/or equalization at the county level, for the determination of assessed values subject to county taxes. This latter objective, county-usable assessed values, conditions the classification of jurisdictions used by the Bureau of the Census for the taxable property values survey it conducts quinquennially for each Census of Governments.

For the 1977 edition, the Bureau concluded that there were 7,805 jurisdictions with responsibility for producing assessed values usable at the county (or county equivalent) level for general property taxation.<sup>4</sup> They include *all* of the primary assessing jurisdictions cited above and detailed in table 1, and can be classified into three predominant types:

1) *County assessing system* (type CO): In this system, the county assessor (or corresponding official for an area otherwise

<sup>2</sup>This is a change in reporting method from that used in 1975, and in 1977 for volume 2 of the 1977 Census of Governments. See that volume (detailed citation in footnote 4), and also *State and Local Ratio Studies and Property Assessment*, GSS No. 72, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., August 1975, pages 2, 3, and 19.

<sup>3</sup>Hawaii has three counties (Hawaii, Kauai, and Maui), one city-county (Honolulu), and a fifth jurisdiction, Kalawao, which is entirely a State responsibility. Kalawao has a State administered treatment center for those afflicted with Hansen's disease.

<sup>4</sup>See *Taxable Property Values and Assessment/Sales Price Ratios*, Volume 2, 1977 Census of Governments, U.S. Department of Commerce, Bureau of the Census, November 1978, page 13.

designated but performing county functions) exercises initial official responsibility for determining the assessed value of all taxable property. Thirty-one States and the District of Columbia use this system exclusively. The assessing official attains the job by election in some places, by appointment in others.

There are additionally six States where the above CO type applies only as parenthetically indicated. The States include New York (application in New York City, Nassau and Tompkins Counties); Illinois (19 of 102 counties); Iowa (99 counties, minus areas assessed by 19 city assessors); Missouri (91 of the State's 114 counties); Pennsylvania (a minority of counties); and South Carolina (a majority of counties).

2) *Township-municipal-county system* (type TMC): Here a township or municipal assessor, often elected, exercises initial responsibility for determining the assessed value of each taxable property. A frequently associated feature is some degree of supervisory or equalizing activity at the county and/or State level, though in certain places the original municipal assessment becomes the official value, subject to change only within the appeals process. The TMC structure prevails throughout Indiana, Kansas, Minnesota, New Jersey, and North Dakota. In addition, it exists in those parts of Illinois, Iowa, Missouri, New York, Pennsylvania, and South Carolina not within the above CO classification.

3) *Township-municipal system* (type TM): Within this system township or municipal assessors, elected or appointed, have the initial assessing responsibility, with no equalizing or supervisory involvement by county government. TM assessing occurs in the six New England States (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), and also in Michigan and Wisconsin.

It is noted also that primary assessing jurisdictions still may coexist, in relatively few States, with municipal, school district, or other assessing areas which partially overlap them. An *overlapping assessing jurisdiction* is a local government unit whose assessing official determines the value of each taxable property for that local unit's purposes, without reference to the assessed value determined for the same property for purposes of the primary assessing jurisdiction within which the subject property is also located. Thus, in a situation where a city assessor produces assessed values used by the city and also by the county, for city-located parcels within it, there would be no overlapping assessing jurisdictions.

Forty years ago there were 6,300 overlapping jurisdictions in 22 States. The number of States has dwindled to a relative few, notably Texas. Other States where overlapping jurisdictions are believed still to exist include Mississippi, Missouri (Kansas City and Jefferson City), Pennsylvania, and Tennessee. Though the particular status of the jurisdiction as primary or overlapping does not determine assessment quality, the inherent redundancy of the latter type presages its eventual demise.

## Equity's conflict with simplicity

As noted earlier, one aim of those who conduct assessment ratio studies is to achieve the uniformity intended for an ad valorem base, at least to the extent needed to implement even-handed use of the particular base involved. A State dispensing aid to counties on the basis of countywide assessed value aggregates requires, as a minimum, uniformity among the respective aggregates. Similarly, a conscientious assessor, anxious to discover individual relationships between market values and individual assessed values within parts of the county or among particular use categories of property, requires not only an aggregate ratio as an indicator of the de facto jurisdiction level, but individual ratios as well, as indicators of de facto levels applicable to individual properties or groups of properties. Indeed, these are not enough, since the assessor also requires measures of dispersion, in order to make judgments about how widely individual ratios scatter or deviate from the mean or median ratio for the group involved.

Obviously, the underlying assumption has been that uniformity necessarily conditions any equitable use of the base, whether used for determination of individual tax burdens or aid entitlements. It remains valid, but nowadays more as point of departure rather than for its own sake. Today, in something of a resurgence of classified property taxation, kinds of property are, in 11 States, deemed sufficiently distinctive to warrant assessment, not at one common level but at respectively different specified levels. At the same time, uniform values, even for a single kind of property, the familiar single-family residence, apparently do not "measure up" well enough as tax burden apportionment criteria. Today taxpayers in the same town, who own properties identical in market value *and* in assessed value, are likely to pay identical property taxes *only* if they also essentially duplicate each other in age, annual income status, particular use of the property, and (at least in California and Idaho) time of acquisition of the property involved. As for periodic changes in property, value enhancing or diminishing or not, they may or may not emerge in revised assessments, depending on how their timing or magnitude collide with prevailing "limits" legislation.

Credit the uneven dynamics of inflation, or more sophisticated dissection of market value, or as likely, the precise opposite, but property assessment and taxation today comprise a quest for equity that could perhaps be more just, but hardly more complex.

## Ratio study sources

Because the need to know magnitude and composition of the value base persists, despite changes in property tax administration, governments at all levels continue to conduct assessment ratio studies. A similar "need to know" motivates interested individuals and groups in the private sector. These latter now include not only those academicians concerned with tax and overall economic policy analysis but also the fraternity of legal

and other specialists appealing assessments in a framework of new legislation and heightened sensitivity to the size of property tax bills.

The only such study which is national in scope constitutes a major phase of the taxable property values survey, carried out quinquennially by the Bureau of the Census as part of each Census of Governments, completed for each year ending in "2" and "7." The survey for the 1982 Census of Governments includes the following activity elements:

1) A canvass of appropriate officials in each State and the District of Columbia to obtain values officially assessed, as of the 1981 valuation date, of property subject to local general property taxation within each assessing jurisdiction in the State.

2) Enumeration, on a sample basis, from public records in local recording and assessing offices of approximately 2,100 counties (or equivalent units), of about 250,000 real property sales occurring during a 6-month period of 1981, to obtain data for calculation of statewide and local assessment-sales price ratios, and of dispersion coefficients within local assessing jurisdictions.

3) Calculation of effective property tax rates (amount of tax bill as a percentage of sales price) for each city of 50,000 or more, and the balance of its surrounding county.

4) Enumeration, on a sample basis, of about 1.5 million individual assessed values, to obtain data for estimation of assessed values and numbers of parcels within seven use categories.

Because the Bureau's ratio study is nationwide in coverage, it affords a natural basis for interstate and other interjurisdictional comparisons.

As suggested earlier, State governments conduct ratio studies for two major reasons. The first is achievement of equalization among local jurisdictions, via property values on a common level, as a condition for State aid apportionment. The second relates to improved assessment administration as a means for more equitable property taxation. Ratio study results provide the empirical basis for State corrective action to bring about more uniform assessed values among and within local assessing jurisdictions. Though persuasion and cooperative consultation often suffice for the implementation of State action, some statutes authorize punitive measures in particular circumstances. A State may, for example, withhold necessary certification for an assessment roll deemed to reflect too low a value level.

For their part, local governments view ratio studies primarily as a management tool. Findings applicable to particular neighborhoods or property use categories become the basis for the assessor's decision to establish priorities for reassessment effort, or simply for ongoing appraisal review. Some assessors contacted for this report view ratio studies as a "continuous" operation made possible by computerization. In such an en-

vironment, sales and assessment data are entered into the data base daily. Results become available almost immediately, to satisfy the particular need for accurate value level readings that the circumstances require.

### Ratio studies and contemporary property tax administration

Like any methodological tool, assessment ratio studies serve a purpose or give way to something that works better. Purpose in turn reflects influences over time. In property tax administration today five influences bear heavily on ratio study design and execution. They are: Technology, professional assessing, statistical principles, timing, and policy options and alternatives.

The influence of technology is immediately apparent. It has become unrealistic, for example, to think of ratio studies in other than computer environments. This is progress interlaced with peril, however, since computerization tends to thrive where there is emphasis on things difficult to introduce. Examples are interechelon policy execution and multiagency use of facilities. Both involve cooperation among State and local officials, a ratio study prerequisite stressed in survey responses.

The same technology conditions valuation in an increasing number of assessing jurisdictions, at least with respect to residential property. This leads directly to the second influence, professional assessing. Diversity persists. Some assessors are professional appraisers, but there remain many who carry out the job as a sideline. Across that spectrum, however, the important point is the likelihood of equitable assessing in any given instance, by any incumbent. Thus, a combination of relatively simple properties, public concern and widely disseminated State ratio study findings may well contribute to more uniform assessed values *by* part-time assessors working within less technically advanced organizational structures.

More sophisticated hallmarks of professional assessing characterize more populous places. These include professionally designated incumbents,<sup>5</sup> and the use of necessarily computer-assisted multiple regression analysis in (primarily residential) property valuation. Finally, they include the use, probably computer-related, of an efficient system of tax maps, increasingly likely to feature a variant of computer-assisted geocoding to make possible unique land parcel identifiers.

Some things remain crucial. This is especially true of the third influence, statistical principles. If the universe of sales cannot be used, the sample selected must be representative. Data classifications should stem from reasonable dissections of universe content. Similarly, calculation of measures of central tendency and dispersion coefficients necessarily follow definitional formulae. In this connection, the coefficient of intra-area

<sup>5</sup> E.g., certified assessment evaluator (CAE), a designation awarded by the International Association of Assessing Officers, and member of the appraisal institute (MAI), a designation awarded by the American Institute of Real Estate Appraisers.



dispersion is still regarded as the most widely used measure. This reflects its compatibility, as a nonparametric statistic, with the typically nonnormal distribution of assessment-sales price ratios.

The time influence can be crucial, since property values have been increasing by substantial percentages annually. More than ever, the task of keeping assessed values current implies the need for frequent assessment review. An assessed value has application to a particular date, the valuation date commonly specified in statutes. This value is compared with the price at which the subject property sold, usually at a time subsequent to the valuation date and within the survey period (often 1 year). If sales prices change rapidly, sales early in the survey period will give rise to ratios very different from those likely later in the period.

Time also accounts for differences between the assessor and the market, in respective value estimates for the property. The others are, first, differences in how assessor and market evaluate identical value components, and second, differences between value components considered by the assessor and those considered by the market.

It is assumed that the assessed value as of the valuation date immediately preceding the sale will incorporate value components prescribed, directly or by implication, in applicable statutes. These will also be the value components in the market, unless statutes call for stated levels of full value, or values based on a specified existing use (e.g., open space), instead of highest and best use.

Consequently, ratios ranging down from 100 percent become governing statutory standards against which ratios expressing relationships applicable for individual enumerated sales can be compared. Ratios below the standard will indicate things considered of value by the market but not by the assessor. For ratios above the standard, the opposite is true.

For many State studies, and local studies as well, authorities use assessed values as of the valuation date immediately preceding sale. In some studies, however, at both State and local levels, the valuation date for the assessed values used precedes some sales and follows other sales, or is immediately subsequent to all sales.

Any use of assessed values as of a valuation date subsequent to the sale raises the possibility that the sale itself may have stimulated "corrective" action by the assessor. If such action is limited to sold properties, without concurrent review of other assessments in the involved category, uniformity in treatment of taxpayers is jeopardized. The preferred course of action today, many authorities believe, is to use sales that have occurred as near as possible to the valuation date, either before or after.

In any event, policy itself becomes a basic influence on ratio study execution. As more frequent, more comprehensive value estimation becomes feasible, policy makers condition decisions on completed findings, or test decisions by reference to prospec-

tive findings. Given computerization, some kind of annual review of each property becomes possible, even in jurisdictions with more than 100,000 parcels. In consequence, data become instantly available on value levels among counties, or among neighborhoods in a single county. To the extent that assessment cycles<sup>6</sup> become annual, sales-assessment relationships, or ratios, become a continuous operation.

This report presents findings from a questionnaire survey conducted among officials in all the States, the District of Columbia, the Commonwealth of Puerto Rico, and the Territory of the U.S. Virgin Islands, who have responsibilities involving local assessment administration, and also among assessing officials in selected local jurisdictions around the country.

Findings applicable to States appear in tables 2 through 9. Those relating to local governments appear in tables 10 through 16. Tables 17 and 18 contain data, also based on responses to the questionnaire survey, on transfer taxes and recordation requirements existing in 37 States, and in certain local jurisdictions.

## STATE RATIO STUDIES

### General features

Forty-five States have indicated at least an intent to conduct ratio studies, in most instances on a regular basis, as table 2 demonstrates. California began the studies in 1880, gave them up in 1909, began an annual series in 1955, and now has discontinued them again, in the wake of Proposition 13.<sup>7</sup> The latter has rendered ratio studies meaningless since, in effect, every change in ownership triggers a reassessment, "ready or not." Ratio studies in California have given way to prospective "relative conformity" studies, which will measure how well assessed values conform to the law, now prescribing acquisition value and limited possible annual value accretion as assessment standards.

Among other States, Colorado has not been able to maintain its annual frequency since 1976, and Indiana accomplished its reassessment without doing the ratio study planned for 1980.

Thirty-four of the 45 States carry out ratio studies annually. Five years ago 28 out of 36 responding States so reported. Ohio completes a study every 6 months. Arizona has stepped up the pace, changing from semiannual frequency five years ago to

<sup>6</sup> An assessment cycle is the time period during which the assessing official responsible is expected to reassess, or review in detail (with or without physical inspection), each taxable property in the jurisdiction.

<sup>7</sup> Basically Proposition 13, approved June 8, 1978, changed Article XIII-A of the California constitution, so that assessed value is now 25 percent of full cash value as of lien (valuation) date in 1975, or on subsequent date when property is purchased, newly constructed, or the subject of a change in ownership (such change as defined in the law). For each lien date after that conditioning establishment of "base year value," full cash value shall reflect percentage change in cost of living, but only to an extent that limits any annual increase to no more than 2 percent of full cash value on preceding lien date.

three times a year in 1979. Florida, which uses unverified sales in its annual studies, nevertheless resorts to sales price verification plus appraisals for each quadrennial effort, the results of which are published.

Frequency does not necessarily define the sales accumulation period. Twenty-five States accumulate sales occurring over a stated one-year period. Among the 34 States which conduct ratio studies annually, however, only 21 use 1-year sales accumulation periods. The other 13 States select sales occurring over other time spans, as follows:

3, 8, 13, 24 and 30 months: One State each  
 6 months: Two States  
 3 years: Three States  
 5 years: Two States  
 Various: One State

In apparent response to "full disclosure" pressures, 29 States now publish ratio study results, and another 13 States make the findings available through some means short of publication. The corresponding survey for 1974 revealed that only 26 States published ratio study reports, and only seven additional States labeled the findings as "available." A decade ago, in 1969, there was publication of ratio study results in 30 States.

## Costs

Findings suggest generally that States spend more money on assessment ratio studies now than they did five and ten years ago, though the evidence is somewhat mixed, as table D indicates. Between 1974 and 1979, among States reporting costs in both years, 10 States showed increases in amounts spent for ratio studies, but seven apparently cut such expenditures. One State (Vermont) reported the same amount each time.

An indication of practices over the decade becomes evident from responses of the 24 States which provided costs for 1969 and 1979. Sixteen of these States spent at least twice as much for ratio studies in 1979 as they did 10 years earlier. Such increases can be regarded as substantial despite implicit inflationary influence on costs, since improvements in the "state of the art" since 1969 would reasonably imply relatively greater effectiveness, more economically achieved, for present day studies.

The range evident in costs reported by the various States is vast. For 1979 it extends from \$9,000 in West Virginia to \$6 million in New York. Some of this variation stems from differences in size of the realty inventory. West Virginia, for example, has about 1 million parcels, while New York's total approximates 4.5 million. It should also be noted that States vary in

Table D. Amounts Reported by States as Identifiable Expenditures for Assessment Ratio Studies, Years Indicated

(Amounts in thousands of dollars)

State	1969	1974	1979	State	1969	1974	1979
Alabama . . . . .	(X)	(X)	80	Montana . . . . .	25	50	65
Alaska . . . . .	25	45	(NA)	Nebraska . . . . .	10	(NA)	10
Arizona . . . . .	(X)	(NA)	17	Nevada . . . . .	37	19	18
Arkansas . . . . .	200	470	(NA)	New Hampshire . . . . .	18	(NA)	47
California . . . . .	1,250	1,839	(X)	New Jersey . . . . .	300	(NA)	53
Colorado . . . . .	20	70	<sup>1</sup> 60	New Mexico . . . . .	(X)	(X)	(NA)
Connecticut . . . . .	(NA)	(NA)	(NA)	New York . . . . .	<sup>2</sup> 3,000	<sup>2</sup> 5,500	<sup>2</sup> 6,000
Florida . . . . .	(X)	900	(NA)	North Dakota . . . . .	25	(NA)	(NA)
Georgia . . . . .	200	325	300	Ohio . . . . .	125	38	462
Hawaii . . . . .	20	(NA)	25	Oklahoma . . . . .	6	(X)	120
Idaho . . . . .	12	90	98	Oregon . . . . .	30	(NA)	140
Illinois . . . . .	(NA)	30	160	Pennsylvania . . . . .	412	625	847
Indiana . . . . .	30	(X)	(NA)	Rhode Island . . . . .	(NA)	(NA)	(NA)
Iowa . . . . .	12	100	55	South Carolina . . . . .	(NA)	(X)	(NA)
Kansas . . . . .	18	(NA)	(NA)	South Dakota . . . . .	(NA)	5	15
Kentucky . . . . .	50	50	23	Tennessee . . . . .	(NA)	(X)	100
Louisiana . . . . .	(X)	(X)	(NA)	Texas . . . . .	(X)	(X)	1,800
Maine . . . . .	(NA)	(NA)	250	Utah . . . . .	(NA)	20	50
Maryland . . . . .	75	55	31	Vermont . . . . .	150	<sup>3</sup> 300	300
Massachusetts . . . . .	125-150	(NA)	300	Virginia . . . . .	(NA)	(NA)	(NA)
Michigan . . . . .	150	(NA)	(NA)	Washington . . . . .	100	525	750
Minnesota . . . . .	125	235	490	West Virginia . . . . .	2	(NA)	9
Missouri . . . . .	60	(X)	626	Wisconsin . . . . .	55	300	50

NA Not available.

X Not applicable, or did not report.

<sup>1</sup> Amount actually spent in 1976.

<sup>2</sup> Specifically identified as cost over a 2-year period.

<sup>3</sup> Specifically identified as cost over an 18-month period.

how they treat individual cost components or possible cost components. In State A the initial assembly of sales by county assessors and recorders, and subsequent transmission to the State, may not be separately identified State costs. State B, on the other hand, may assemble sales data directly via transfer tax declarations sent to the department of revenue. Here the cost to the State of such assembly is likely to be known and specifically identified.

In sum, data on costs of State ratio studies invite great caution by any user. Recommended procedure for the interested analyst is direct contact with concerned officials of each State study arousing interest. Only in this way can sufficient details of time, scope, and magnitude be obtained.

### Types of ratios derived

Tables 3, 4, and 5 contain information showing data arrayed according to reported underlying status, i.e., the designation of ratios by respondents as "officially found" or "unofficially calculated." Though much flexibility necessarily attaches to such terms, this report identifies as "officially found" those ratios computed to satisfy prescribed requirements such as publication, an aid apportionment, or other goals not necessarily associated only with internal analysis. Ratios are described as unofficially calculated when their derivation is likely to be for an internal managerial purpose (such as work planning), but is not specifically required.

As in 1975, respondents in a preponderance of States classified ratios as "officially found," whether the frame of reference involved was jurisdiction, intra-area location, or property use category. The summary of results for 1974 and 1979, shown in table E, reveals only one specified category (all realty as one group) where the ascribed "official" status apparently diminished during the 5-year period.

Official status for assessment ratios can emanate from statutory directives, administrative regulations, or reasonable interpretation of generally phrased statutory assignments of responsibility.

Kansas and Nevada exemplify statutory specifics. In Kansas, the director of property valuation each year "shall determine, as nearly as possible, the sale price of each tract or piece of real estate and the ratio of the assessed valuation to the sale price..." The director then arrives at the average ratio for, respectively, urban realty, rural realty, and "each classification of property and for all classes combined in each county." The director's annual report, "published as required" includes county "ratios of urban...and rural real estate" and other classifications of property.<sup>8</sup>

Nevada statutes clothe that State's Department of Taxation<sup>9</sup> with some explicit assignments. Not later than May 1, each year,

for each county, the department determines, for each category of property, the ratio of assessed value to "full cash value," and the ratio of assessed value to assessed value of property in the corresponding category in other counties. The department also publishes and certifies the associated county aggregate ratios.

Table E. Indicated Status of Ratios for Selected Classifications, by Numbers of States: 1974 and 1979

Classification	Officially found		Unofficially calculated	
	1974	1979	1974	1979
Jurisdictions:				
State . . . . .	13	23	6	4
Counties . . . . .	26	34	3	1
Municipalities . . . . .	19	20	4	1
School districts . . . . .	7	9	1	—
Townships . . . . .	11	12	1	—
Area locations:				
Urban, entire area . . . . .	12	14	1	4
Neighborhoods . . . . .	5	6	1	2
Suburban . . . . .	4	5	1	3
Rural . . . . .	11	13	1	4
Property use categories:				
Real property:				
All realty, as one group . . . . .	15	12	1	—
Residential, all . . . . .	22	35	2	5
Single-family . . . . .	16	26	4	3
Multifamily . . . . .	16	22	4	1
Commercial . . . . .	25	31	4	5
Industrial . . . . .	21	26	4	4
Agricultural . . . . .	24	28	3	3
Vacant land . . . . .	18	24	5	4
Timberland . . . . .	5	11	3	2
Mineral rights . . . . .	2	3	3	2
Other . . . . .	6	6	—	—
Personalty . . . . .	6	6	3	2
Public utilities . . . . .	6	6	2	2

— Represents zero or rounds to zero.

In order to be able to make such determinations, the department conducts ratio studies in nine counties one year and eight counties the next, on an alternating basis. Formulas and procedures used "must include a random sampling of property and sales and the use of the mean, median, standard deviation, and other statistical criteria that will indicate an accurate ratio of full cash value to assessed value and an accurate measure of assessment equality."<sup>10</sup> The formulas and procedures are those mandated for use by the county assessors. Administrative regulations provide directions for discounting median ratios to reflect the appropriate year of the 5-year assessment cycle involved, and to specify the corrective action available against any county with a coefficient of dispersion higher than 25 or a standard deviation higher than 20.<sup>11</sup>

In Iowa, statutes give assignments to the director of revenue in terms just as unequivocal but somewhat more general. The

<sup>8</sup> Kansas Statutes Annotated, Section 79-1437.

<sup>9</sup> Head of the department is the seven-member Nevada Tax Commission. Chief administrative officer is an executive officer, appointed by the Governor. Nevada Revised Statutes, Section 361.120.

<sup>10</sup> Nevada Revised Statutes, Section 361.333.

<sup>11</sup> Property Tax Regulation 12, Nevada Department of Taxation, Carson City, January 10, 1977.



director "shall determine the degree of uniformity of valuation as between the various taxing districts..." In order to do it, the director "shall prescribe rules and regulations relating to the standards of value to be used by assessing authorities in the determination, assessment and equalization of actual value for assessment purposes of all property subject to taxation..., and such rules shall be adhered to and followed by all assessing authorities."<sup>1 2</sup>

Ways in which States classify the assessment ratios their studies produce follow generally predictable patterns. Among those applicable to governmental jurisdictions, countywide ratios predominate. Thirty-four States report that they derived official county ratios in 1979, 12 more than those so responding five years ago. Official city ratios are produced in 20 States and similar township ratios in 12, both situations indicating little change during the period. Still somewhat surprising is the relatively little attention given school district ratios as such. Only nine States report their official derivation as a usual work product. This may in part reflect the sometime reality that a school district and a county or city are coterminous.

In terms of ratios for intra-area locations suburbia still occasionally pierces an otherwise urban-rural dichotomy. Seventeen States now calculate specifically urban and rural ratios, either officially or unofficially, while eight States produce results for areas designated as suburban. Illinois calculates urban ratios only.

With respect to ratios for "all realty" as a single group, only 12 States report that such figures become official results, 3 less than was the case 5 years ago. At the same time, as table E indicates, there is increasing emphasis on ratio derivation for each of the use categories in the expected category spectrum, including therein not only one family *and* multifamily residential, but also "few sales" types, such as commercial and industrial. More than half the States now produce ratios for each of these specified realty uses.

### Characteristics and methodology

Ignoring (so far at least) the disenchantment with market value implicit in Proposition 13-type acquisition value assessments, States continue to conduct ratio studies in a framework of market value. As indicators of the latter, they still use three types: sales prices, appraisals, and combinations of the two.

A *sales price* is the amount, expressed in terms of money, which the transacting parties mutually agree the property in question is worth at the time of ownership transfer. In the frequent absence of anything better, it is thought to be the best indication of market value.<sup>1 3</sup> Sales prices comprise the basic data for ratio studies in 42 States, as shown in table 6.

An *appraisal* is an opinion from a specialist of the amount of money which represents market value of the property involved.<sup>1 4</sup> Three States report use of appraisals only, as table 6 indicates. They are Indiana, Missouri, and New York. For Indiana the choice is apparently academic at the moment since the recent 6-year reassessment was completed without a ratio study. New York's exclusive reliance on appraisals represents a change from 5 years ago when both sales and appraisals were used.

Other States changing since 1974 include Arkansas and Florida, both reporting use of appraisals exclusively 5 years ago. Arkansas now supplements sales with appraisals, while Florida resorts to appraisals only for types of property infrequently sold. The latter class typically refers to commercial and industrial properties, regarding which sales may occur too seldom to support statistical inferences.

In summary, 20 States rely exclusively on sales, 22 prefer a combination of sales and appraisals, and 3 use only appraisals. Of the 22 choosing a combination, half confine the use of appraisals to property types subject to few sales.

Appraisals for ratio studies are usually the work of State appraisers, but sales data assembly is, in most cases, a cooperative effort that begins at county or municipal level, as information in table 6 demonstrates. Local recording officials furnish the transfer (sales) data, while local assessors supply assessed value and associated physical characteristics information.

Available data suggest that the common disposition now among States is to initiate some sales screening as soon as possible, the better to begin processing with a "practical quantity" rather than necessarily a universe of sales. Only 12 States reported that basic ratios included 80 percent or more of all sales occurring during the survey period. This compares with 21 States 5 years ago. Screening occurs in earnest when sales prices are verified, at least in 23 States (17 in 1974). The third stage, statistical processing, affords additional opportunity for removing questionable sales, and screening here in fact takes place in 31 States, compared with 23 five years ago.

How to accomplish verification of a sufficient number of sales prices is an imponderable subject to the availability of resources such as time, money, and personnel. Seventeen States report that they verify prices, at least in part, by in-person or telephone interviews, as table 6 indicates. For 1974, only six States so reported. A questionnaire is deemed effective by nine States, 5 less than the number so reporting 5 years ago.

The other principal verification method is use of transfer tax data. Transfer taxes (also called "documentary," "recording," and "conveyance" taxes) are now law in 35 States (see later

<sup>1 2</sup>Iowa Statutes, Section 421.17-1.

<sup>1 3</sup>Market value of property is generally regarded as the amount of money which a willing, knowledgeable buyer would in practical circumstances, pay to a willing, knowledgeable seller to acquire the property in a transaction free of duress for either.

<sup>1 4</sup>The appraisal is usually in writing. It incorporates attention to all factors and approaches held to be relevant to the circumstances, including what the property cost, what loss in value (depreciation) it has sustained, if any, what income it will earn, and what sales prices similar properties have commanded.

discussion), and at least 3 States require some kind of sales price documentation as part of their administration (see tables 6 and 17). Frequently an affidavit containing the sales price, or at least an unsworn declaration of such price, must accompany the deed of conveyance at time of recordation. If an affidavit is required, its qualification as a sworn statement will subject anyone signing it to penalties for perjury in the event it contains falsities. Individual State statutes also contain specific penalties for violation of applicable provisions, even where no affidavits are required.

Considerable agreement prevails among State agencies about which sales to exclude summarily, as table 7 indicates. Anything qualifying as a forced sale, for example, is not deemed an "arm's length" transaction. Forty-two States report that such sales are removed. Transfers between relatives are similarly regarded, the reasoning being that any price shown will probably differ from that likely in a sale between unrelated parties. Individual States indicate in procedural memoranda that sales involving governmental units and nonprofit private organizations may sometimes be valid value indicators. The analysis necessary to confirm this is likely to be undertaken however, only if other types of sales are insufficient for study purposes.

#### Nature of sample

The source data for assessment-sales price ratio studies are sales of individual parcels. There were 88.2 million parcels of locally assessed taxable realty in the United States in 1976, according to the 1977 Census of Governments.<sup>15</sup> Twenty years earlier there were about 61 million. An estimate as of 1980, based on best available information, would place the total at 97.5 million. Some notion of the composition of the parcel inventory, for 1956, 1966 and 1976, is apparent from table F.

<sup>15</sup> *Taxable Property Values and Assessment/Sales Price Ratios, op. cit.*, table 6, page 53.

Sales occur at a rate that defies precision in estimating. Measurable sales for 6 months of 1976, estimated for the 1977 Census of Governments, approximate 1.86 million.<sup>16</sup> On an annual basis, the volume reaches 3.7 million sales, or 4.2 percent of the total number of locally assessed taxable parcels. These are measurable sales of ordinary real property,<sup>17</sup> however, and the annual turnover may be more than twice the 6-month figure. A realistic rate may thus be closer to the 8 or 9 percent suggested by some authorities.<sup>18</sup>

In any event, any State which uses only sales prices as market value indicators necessarily begins with the assumption that properties which sell, a market selected group, reveal information useful to judgments about the entire taxable realty universe.

Even if *all* sales are used, no more than 9 percent of the parcel inventory becomes the basis for a judgment about all of it. Sales are a sample of the parcel universe, or at least that part of it subject to market transactions.

Except for Indiana, Missouri, and New York, all States use sales, at least in part. Even in the States dependent on appraisals only, sales are important, since appraisals reflect attention to all three value approaches, one of which is assembly and analysis of market (sales) data.

<sup>16</sup> *Ibid.*, page 60.

<sup>17</sup> A measurable sale is a transfer of realty at a price reflecting the interaction of a buyer and a seller who are informed about the subject property and deal on an arm's length basis, without duress. Ordinary real property, in 1977, excluded realty with an assessed value above an amount which, in light of the assessing area's aggregate ratio for all properties, could be presumed to have a market value in excess of approximately \$750,000; and separately assessed mineral rights and unclassifiable property.

<sup>18</sup> See *Monitoring Foreign Ownership of U.S. Real Estate*, A Report to Congress, Volume 2, U.S. Department of Agriculture, Washington, D.C., 1979, pages 187 and 202.

Table F. United States Summary, Number of Parcels, Locally Assessed Realty, Years Indicated

Use category	1956		1966		1976		Percentage change 1956 to 1976
	Number (thousands)	Percent of total	Number (thousands)	Percent of total	Number (thousands)	Percent of total	
United States, total . . . . .	61,158	100.0	74,832	100.0	88,194	100.0	44.2
Acreage and farms . . . . .	14,185	23.2	14,085	18.8	13,893	15.8	(2.1)
Vacant platted lots . . . . .	12,694	20.8	14,250	19.0	17,492	19.8	37.8
Other categories:							
Residential (nonfarm) . . . . .	30,924	50.6	42,329	56.6	51,971	58.9	68.1
Single-family houses only . . . . .	29,973	49.0	40,436	54.0	48,750	55.3	62.6
Commercial and industrial . . . . .	1,291	3.7	2,487	3.3	3,663	4.2	59.9
Commercial . . . . .	1,942	3.2	2,112	2.8	3,179	3.6	63.7
Industrial . . . . .	298	0.5	376	0.5	485	0.5	62.8
Other and unallocable . . . . .	1,067	1.7	1,679	2.2	1,175	1.3	10.1

Note: Except for decrease shown in parentheses, 1956 to 1976 changes are increases.

Source: Censuses of Governments, for 1957, Volume 5 (as revised), 1967, Volume 2, and 1977, Volume 2.

<sup>1</sup> "Total commercial and industrial" includes, for California and Nevada, properties not allocable by type—principally separately assessed mineral rights.

Where fewer than all sales are used, the source data in effect represent a sample of a sample, in terms of taxable base. Appraisals supplementing sales often constitute a sample representing that portion of the taxable base (e.g., certain commercial and residential property) rarely transferred as part of a usable sale. States which use appraisals only commonly provide for coverage cycles, with appraisals carried out in a portion of local jurisdictions each year.

Whether or not properties that sell accurately represent all of those that do not is a proposition that eludes proof. It has been deemed basically reasonable because no other inference seems more reasonable. With the advent of assessment standards that condition assessments on a time and cost of acquisition in the past (e.g., Proposition 13-type), the reasonable quality of the basic assumption underlying ratio studies will encounter increasing scrutiny.

### **Selection criteria**

The budget influences and also reflects operational choices. Asserting this neither overstates nor ignores statistical integrity. It underscores the reality that adequate resources must be available. This makes necessary careful revisions concerning the number of sales to enumerate (all, or a representative sample) and the number and type of appraisals to include.

With respect to sales, once a decision is taken to use a sample instead of all sales, a strategy for stratification is developed. Elements conditioning selection of a sale for a particular stratum may include the magnitude of the assessed value involved, the property use category, and statistical relationships between the applicable assessed value and the last previous sales price. In the alternative, strata may be determined simply within assigned assessed value ranges, with selection from each stratum on a random basis. Appraisals deemed necessary will be decided in accordance with a decision on the residual representation necessary for valid statistical use.

Individual States differ substantially in selection criteria procedures. A few examples follow.

### **Florida**

For its 1979 "in depth" study encompassing 19 counties, the State targeted a total of 6,645 properties, in 7 property use categories, for scrutiny. The property representation was to come from verified sales if possible and appraisals if necessary (see background data in table 6). Most of the appraisals occurred in the following categories: Multifamily residential, commercial, industrial, agricultural, and otherwise unclassified "high value" realty. The number of properties in each group was the one deemed likely to produce for each group the standard deviation sought, at the 95 percent confidence level.

### **Idaho**

In each of three use categories where appraisals were deemed necessary (commercial, agricultural, and timberland), the State

based minimum number of appraisals on a relationship with 3 percent of the estimated market value for the category.

### **Maryland**

For its 1979 study the State relied entirely on sales for results affecting residential properties, because the latter "represent about 83 percent of the total number of assessable accounts." Residential sales provide the data base under a plan for completely computerized residential ratio studies on a continuous basis.

To supplement such sales for its 1979 study, the State carried out 650 appraisals, 500 involving commercial and industrial properties, and 150 dealing with agricultural parcels. Selections were made on the basis of proportions of the total assessed value represented by category totals.

### **New York**

First the State allocates appraisal cost units for work in each municipality, basing such units on empirical data from the preceding ratio study survey, adjusted for known cost changes since. Then market value intervals are established within each major use category for each assessing jurisdiction (in most instances, the town). A proportionate number of appraisal cost units are then made available for properties within each value range and use category. For its two year study finished in 1978, the State completed 55,794 appraisals, classified as follows: Residential, 28,337; apartment properties, 1,569; commercial, 8,009; industrial, 1,325; agricultural, 7,256; and vacant land, 9,298.

### **Ohio**

The State's commissioner of tax equalization is charged with the duty of equalizing real property values in the year of sexennial reappraisal, and in the third calendar year following such reappraisal. As a part of the equalization process, the commissioner trends, by means of regression techniques, assessment-sales ratios for the six semiannual periods preceding an equalization year, in order to obtain an estimated assessment-sales ratio as of January 1 of the equalization year. To supplement assessment-sales ratio information used in equalization procedures, the commissioner orders test appraisals to be made. For the most recent equalization, that of tax year 1979, there were 782 appraisals completed, as follows: Agricultural, 291; commercial, 369; and industrial, 122.

### **Washington**

For its sales sample the State's department of revenue develops a sample plan for each county, based on previous year's sales volume. Initially acceptable are sales involving warranty deeds and contracts. Sales for a current study must have occurred during the last 5 months of the preceding calendar year, or during the first 3 months of the study assessment year. Sales excluded fall in any one of 25 categories.



To supplement sales, the department reviews a county's prior year's sales studies to discover any assessed value stratum or land use class without sufficient sales for producing a valid measurement of assessment level.

Where appraisals are deemed necessary, a stratified random sampling of affected real property listings takes place, with individual assessed value the controlling element in stratification, and random number tables used as deemed necessary. The actual number selected within each stratum is determined by application of appropriate statistical techniques, related to previous year ratio results for the county.

Department staff specialists then appraise the selected properties, individually and not en masse, using the three approaches to value (depreciated replacement cost, capitalized income, and market ratio analysis). For the State's 1979 study the department completed 1,475 individual appraisals, slightly more than 2.5 percent of the total sample.

### Statistical measures derived

Two types of statistical measures predominate as ratio study results, each related to one of the two fundamental goals of assessment. First there are measures of central tendency, indicators of where the assessment levels in fact stand, and thus related to the goal of compliance with legally prescribed value levels. Three such measures emerge from many assessment ratio studies: the arithmetic mean, median, and aggregate ratios.

The arithmetic mean is simply the common "average" of all the individual ratios, each of which expresses the relationship, for the sold property involved, between the assessed value of the property and the price for which it sold. Expressed mathematically, the mean is the familiar quotient which results from dividing the sum of individual ratios by the number of sold properties involved.

The next measure of central tendency is the median, the ratio with the middle value in an array of individual ratios arranged from lowest to highest, assuming an odd number of sales in the array. If the array contains an even number of sales, the median is the mean of the two middle ratios.

Finally, the aggregate assessment-sales price ratio presents the prevailing assessed value aggregate for all sold properties as a percentage of the sum of all the sales prices.

The 22 States listed below, and in table 8, calculate all three of the above measures:

Alabama	Illinois	*Nebraska	Utah
Arizona	*Iowa	*North Dakota	Vermont
Connecticut	Kansas	Oklahoma	*Virginia
Florida	Maine	*Oregon	*Washington
*Georgia	*Minnesota	Tennessee	*Wisconsin
*Idaho	Missouri		

Five years ago, 16 States calculated all three measures. They include the 10 States above designated with an asterisk, plus the following: California, Kentucky, Montana, Nevada, Pennsylvania, and South Dakota.

As table 8 indicates, 36 States now calculate aggregate ratios, an increase of 5 over the number that did so 5 years ago. States now producing mean and median ratios total 36 and 33, respectively, up by 10 and 9 States, respectively, over corresponding summaries for 1974. The counts for 1979 include California in a planning sense only, since studies there are presently discontinued.

The second fundamental assessment goal is uniformity, i.e., the quality, for each assessed value, of bearing the same relationship to market value as that contained in every other assessed value in the jurisdiction. Uniformity among values was, in simpler times, the surest setting for equitable tax bills. Nowadays it's just as critical for attainment of an equitable tax base, since ultimate tax bills may have little direct relationship to uniform values, given the owner income and status influences of circuit breakers and the like alluded to earlier.

Measuring uniformity comes about by measuring its converse, dispersion or the extent to which assessed values scatter around a mean or median, and thus are not uniform. As in earlier studies, the most popular measure remains the coefficient of intra-area dispersion. Still sometimes called the "index of assessment inequality" or "the Russell index,"<sup>19</sup> the coefficient of intra-area dispersion is the quotient produced by dividing the average deviation (from either a mean or median ratio) by that ratio. In the simplified example that follows, the median (middle) ratio is 19 percent, and on the basis of the five sales presented, any given assessed value in the jurisdiction involved may be as much as 55.3 percent above or 55.3 percent below where it should be. The Bureau of the Census computes the coefficient of intra-area dispersion for each sample jurisdiction as part of its taxable property values survey for each quinquennial Census of Governments.

Example, coefficient of intra-area dispersion

Assessed value	Sales price	Assessment-sales price ratio (percent)	Deviations from median
\$ 600	\$20,000	3	16
300	3,000	10	9
7,600	40,000	19	—
2,000	8,000	25	6
4,050	13,500	30	11
			42

Median ratio: 19 percent

Average deviation: 10.5 (computation: 42 ÷ 4)

Coefficient of intra-area dispersion: 55.3 percent

<sup>19</sup> The coefficient was popularized by Dr. John H. Russell, former director of research for the Virginia Department of Taxation. An early discussion of its use as a measure of assessment uniformity is contained in "The Russell Formula," *Assessors News Letter*, Volume 21 (viii), August 1955, pages 94-95.

The present survey reveals that 29 States calculate the coefficient of intra-area dispersion as an integral part of their ratio studies. Sixteen of the States base the coefficient on the median, while 12 use the mean, and one State (Nevada) calculates a coefficient from both. Five years ago 21 States produced the coefficient, 12 of them using the median as the basis. One reason for the measure's acceptance is intuitive appeal. Another is the consensus that usually an array of assessment ratios is not normally distributed.

Whether or not that is always the fact, some authorities question a dependence on nonparametric measures only.<sup>20</sup> Indeed, 23 States now compute the standard deviation, one more than the number of States doing so for 1974. The standard deviation, a measure regarded as very helpful in the interpretation of data likely to be normally distributed, is the square root of the variance. It results from extracting the square root of *squares* of deviations from the mean (not the median) of a frequency distribution. Though a frequently used measure of dispersion, the standard deviation is sometimes faulted for emphasizing extreme values (a consequence of squaring the deviations).

When the standard deviation is divided by the arithmetic mean, the quotient expressed as a percentage is the coefficient of variation, a measure now computed as part of ratio studies in nine States. This coefficient gives an indication of relative dispersion.

Individual States go further - Montana and Nevada, for example, compute "Pearson's coefficient of skewness," an aid in the evaluation of "the shape of the distribution" of the individual ratios. This coefficient is the quotient of the quantity, three times the difference between mean and median ratios, divided by the standard deviation. Samples with a coefficient of skewness between minus 1 and plus 1 may be considered "approximately normal." Using the coefficient implies close scrutiny of any "outlier" ratios in the distribution. Montana also computes a coefficient of kurtosis to derive an indication of peakedness of graphed ratios.

At perhaps a less esoteric level, 20 States now calculate the price-related differential, also called the "index of regressive assessment." Only 10 States produced this measure 5 years ago. The price-related differential is the quotient obtained as a result of dividing the mean ratio for a given group of sales by the aggregate ratio for the same group. An area differential ratio that exceeds 100 percent indicates that relatively high value properties are likely to have lower ratios than relatively low value properties. For such differential ratios at or below 100 percent, the converse is true.

#### Uses of ratio study findings

As stated earlier, and as shown in table 9 States conduct ratio studies for two principal reasons: to marshal evidence for con-

firming or changing existing individual assessed values, and to discover a pattern of adjustment factors which, when applied to local jurisdiction aggregates, will yield for each jurisdiction and for the State, assessed value aggregates at a common level with respect to market value. In brief, the State arrives at the results of ratio studies in order to review (individual assessments) and equalize (jurisdiction aggregate assessments). "Equalization" is sometimes understood to have "review" and "equalize" connotations. In such circumstances, the "review" function can be thought of as equalization *within* a jurisdiction, whereas the equalization function can be said to equalize aggregates *between* and *among* jurisdictions.

One traditional equalization purpose of ratio studies still predominates despite many changes in school finance, especially with more direct State fiscal participation since the succession of court cases that began with *Serrano* in 1971.<sup>21</sup> That purpose is the establishment of a common level, equalized property value base to serve as the means through which State aid to public schools can be apportioned. As table 9 indicates, 33 States now use ratio studies for this purpose. This compares with 27 so reporting for 1974.

There are other aid apportionment objectives as well, as table 9 makes evident: health grants (Georgia); and aid, specified or not, to local governments (Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, and New York). Ratio study results are also used in the development of bases that condition debt or levy limits (Illinois, New York, and Oregon), assessment levels for public service property (Virginia), and even salary levels (Oklahoma).

In the "review" area, assessment ratio studies influence identity and selection of reappraisal targets, according to area, use category, or both, in 36 States, substantially more than the 23 so involved 5 years ago. They also constitute an important element in evaluating reappraisal effectiveness in local jurisdictions in 26 States, 11 more than those reporting this purpose for 1974.

The use of ratio study findings in pursuing individual appeals has attracted similarly heightened interest, though the assertion cannot be confirmed directly by this survey. Table 9 shows that the possibility of using such findings for taxpaying appeals does exist in 17 States (one in an "unofficial" manner). The same number of States (though not the same States) provided evidence of the same possibility 5 years ago. Despite this apparent stagnation of interest, the instances of ratio study involvement in court cases would seem to have increased during the past 5 years. Specific examples are cases brought under the Railroad Regulatory Revitalization and Reform Act. Others include the

<sup>20</sup> See *Who Pays the Property Tax?* by Henry Aaron, The Brookings Institution, Washington, D.C., 1975, page 15.

<sup>21</sup> Major cases: *Serrano v. Priest*, 557 P 2d 929, 135 Cal. Rptr. 345 (1976); *Serrano v. Priest*, 487 P 2d 1241, 96 Cal. Rptr. 601 (1971); *San Antonio Independent School District v. Rodriguez*, 411 U.S. 1, 93 S. Ct., 1278 (1973); *Robinson v. Cahill*, 62 N.J. 473 (1973); *Shofstall v. Hollins*, 110 Arizona 88, 515 P 2d 590 (1973); *Horton v. Meskill*, 172 Conn. 615, 358 A 2d, 700; *Pauley v. Kelly*, 225 S.E. 2d 859 (1979).

still numerous State court school finance cases. One development of note is the more common use of privately conducted studies carried out for a specific court case or similar taxpayer purpose.

## RATIO STUDIES BY LOCAL JURISDICTIONS

Assessment ratio studies by local assessing jurisdictions primarily serve a managerial purpose. They provide evidence helpful to the assessor for deciding which areas within the jurisdiction, and which property use categories throughout the jurisdiction require priority attention, and in what order.

The local studies also fit within the operational framework conditioning those conducted by States. Survey findings reveal that in 42 of 45 States, officials at the local level provide the basic sales data to the State agency. Studies at the two levels tend to be complementary. The same sensitivity to statistical requirements is usually evident in most State and local efforts. The major difference is the greater proximity to day-by-day assessment policy that local studies naturally exhibit. As if to confirm this, assessing officials in several localities carry out studies on a continuing basis, relying on computer technology for immediate access to ratio study results for an entire jurisdiction, a neighborhood, a group of census tracts, all sales in a particular use category, or any desired "sort" programmed.

The material which follows highlights aspects of local assessment ratio studies presented in tables 10 through 16. Data are based on questionnaire responses, other materials provided by respondents, and telephone conversations. In that connection, the current survey produced fewer responses than the 1974 study, because the 11 California jurisdictions taking part 5 years ago had nothing to report this time. A summary of responses with respect to each table (except table 14, which demonstrates substantial consensus) is presented here.

### Local jurisdictions responding

With respect to	In 1974 survey	In 1979 survey	In both surveys
Table 10	56	51	28
Table 11	51	49	26
Table 12	56	48	28
Table 13	54	51	27
Table 15	54	51	28
Table 16	53	49	27

### General features

As table 10 indicates, 37 of the 51 local jurisdictions responding conduct ratio studies annually, and three carry out the work every 6 months. Corresponding frequencies were cited 5 years ago by 34 and 8 jurisdictions, respectively. Five places now do the job on either a continuous, "as required," or "when requested" basis.

The sales occurrence period encountered extends from 6 months, in 3 places, all the way to 4 years, though the predominant time used is 1 year, a practice in 29 of the jurisdictions.

None of the places that reported in the current survey publish results. In 1974 five did so. The taxpayer can see the applicable ratio on the tax bill, however, in three places, and ratio results are otherwise obtainable in 38 others (in 21 States), 8 more than 5 years ago. Only ten jurisdictions in seven States now report that findings are not available. Nineteen so reported for 1974.

Some apparent changes in practice have occurred. Maricopa County (Arizona) formerly used a 3-year sales occurrence period, now finds 1 year sufficient. Fort Worth (Texas) shortened the period from 2 years to 6 months. Detroit (Michigan) went the other way, changing from 1 year to 18 months. So did Arlington County (Virginia), which lengthened the sales period from 1 year to 3 years.

Among areas for which ratios are derived, neighborhoods are apparently most important, according to the showing in table 11. Thirty-one jurisdictions in 18 States produce neighborhood assessment ratios, almost equal to the 32 jurisdictions so reporting for 1974. Governmental units are also important. Studies in 25 places contain "entire area" ratios, and similarly there are municipal or township ratios in 25 places. Eighteen jurisdictions produce separate "suburban" ratios.

Property characteristics still command considerable attention in local assessment ratio studies. Eighteen localities in 13 States calculate an assessment ratio for each major property type as classified in the local appraisal manual. Similarly, structure age is a criterion in 16 jurisdictions. Ratios for each of specified value ranges are available in 21 places.

As in the survey 5 years ago, single-family residential ratios are most common, as table 12 indicates. Thirty-four local governments in 21 States now produce them. The count is 12 less than those doing so for 1974, but the earlier survey involved the 11 jurisdictions in California where ratio studies as such no longer occur. Present findings also indicate a decrease in the number of places calculating commercial, industrial, and agricultural ratios from 42, 39, and 22 localities for 1974, to 37, 33, and 20, respectively, for 1979. Thirty-two jurisdictions produced vacant land ratios in both years.

### Characteristics and methods

Local assessment ratio studies depend primarily on sales, as data in table 13 make evident. Of the 51 counties and cities responding to the question, 42 use sales exclusively, and the other 9 supplement them with appraisals. Appraisals for local studies are likely to be concentrated largely on commercial, industrial, special purpose, and apartment properties with any single-family residence appraisals ordered only in distinctive circumstances. Any appraisals that do occur will incorporate use of all market information available. They will in fact amount to reassessments. In most instances they will be the work of the same specialists who supply the value estimates which are the basis for the original assessed values.



Five years ago the situation was much the same. All of 54 localities reporting used sales, 40 of them exclusively. As might be expected, procedural changes have occurred in some places. In the survey 5 years ago, for example, Detroit reported initial use of the entire sales universe, plus supplemental use of appraisals. According to the response for the present survey, however, Detroit now relies only on a sample of sales, without resort to appraisals.

Twenty-nine of 51 jurisdictions responding include all sales initially. In the 1974 survey 36 of 54 localities so reported. The number of places limiting sales data to a sample increased during the period, from 18 to 21. Pierce County in Washington varies procedures regarding sales selection, depending on needs and resources. The latter county and others in Washington illustrate the frequent dual stance of local jurisdictions. Even as they conduct assessment ratio studies for their own purposes, local governments often perform the sales data assembly job for the State studies.

In the City of Wichita Falls, Texas, a computerized integrated municipal information system, introduced in 1974 in accordance with a jointly financed city-Federal cooperative agreement, provides not only appraisal estimates conditioning many of the assessor's initial assessments, but also encompasses an ongoing assessment ratio program, with emphasis on intra-neighborhood uniformity. The system, called PROVES (Property Valuation and Equalization System), has a data base that includes 100 items of information for each parcel. PROVES develops two appraisal estimates for each property, one a computer calculated cost indication, the other a computer-assisted market comparison indication. The assessment specialist arrives at an assessed value after comparing the two, with visual inspections an integral part of the process. Sales enter the data base constantly; resultant assessment/sales ratios reveal the targets for reappraisal attention within a 3-year cycle that assures recurring review of every parcel.

Sales price verification occurs by way of personal interview and telephone, methods also used in at least 17 of the other local jurisdictions responding to this survey, as table 13 indicates. Screening of sales can occur at various times during enumeration, or as a consequence of verifying price, or during statistical processing. Most localities screen sales during the latter two phases. Transfer tax documentation furnishes one means through which verification can take place.

#### Statistical measures derived

"What is the actual value level and how uniform is it?" That is the central question assessors seek to answer in conducting local assessment ratio studies, since knowing what prevails is a necessary prerequisite to assessment monitoring and corrective action. The actual level involved may refer to the entire county,

or to a neighborhood, or to particular kinds of property in either. Thus, measures of central tendency and dispersion indicators attract priority interest as aims of statistical calculations. A summary of statistical measures derived for 1974 and 1979 is shown in table G.

**Table G. Statistical Measures Derived, by Numbers of Local Jurisdictions: 1974 and 1979**

Item	1974	1979
Jurisdictions responding . . . . .	55	51
Mean ratio . . . . .	41	40
Median ratio . . . . .	33	30
Ratio of aggregate amounts . . . . .	29	32
Coefficient of intra-area dispersion:		
From median ratio only . . . . .	17	12
From mean ratio only . . . . .	8	6
From both ratios . . . . .	2	4
Coefficient of interarea dispersion	11	17
Price related differential . . . . .	4	8
Standard deviation . . . . .	25	26

While it is somewhat surprising that coefficients of dispersion receive relatively little mention in local responses for this survey, a preoccupation with uniformity is evident in that almost half of the jurisdictions reporting calculate a standard deviation.

This may seem to call into question the presumed consensus that assessment ratios are not normally distributed. It is noted, however, that 22 localities did report the derivation of the coefficient of intra-area dispersion. This number indicated increased use of the measure in 1979, since 11 of the 27 reported derivations for 1974 referred to California jurisdictions not now responding. Seventeen local places reported the derivation, in 1979, of a coefficient of interarea dispersion. This measure is the quotient resulting from dividing the average deviation from the median (or mean), among "area" ratios, by that median (or mean). "Areas" in the local jurisdiction context would refer to neighborhoods, subdivisions, census tracts, or similar spatial groupings.

#### Purposes and implementation

Specifics associated with the essential intra-area uniformity aims of local ratio studies are contained in table 16. Assessment ratio studies provide the basic findings necessary for decisions about where to allocate reappraisal resources, and in what sequence. They can also condition conclusions involved in the resolution of taxpayer appeals, especially during the informal preliminary phases, before administrative agency and court involvement take place.

A summary of results for 1974 and 1979, bearing on purpose and implementation of local assessment ratio studies, is contained in table H.

**Table H. Purposes and Implementation of Local Assessment Ratio Studies, by Number of Reporting Jurisdictions: 1974 and 1979**

Item	1974	1979
<i>Purpose—</i>		
Equalization of assessed values within county, or other unit . . .	47(9)	41
<i>Accomplishment of reappraisal objectives—</i>		
Selection of targets:		
By area . . . . .	46(10)	33
By use category . . . . .	36(9)	28
Evaluation of reappraisal effectiveness . . . . .	40(11)	26
Possibility for use in taxpayer appeals . . . . .	17(2)	21
<i>Implementation: Findings may condition individual value changes in—</i>		
An entire jurisdiction . . . . .	35(6)	29
Individual use categories . . . . .	39(9)	20
Neighborhoods . . . . .	38(9)	24

*Note:* Numbers in parentheses refer to number of local California counties included with total shown for 1974. Ratio studies have since been discontinued in California as a result of Proposition 13.

## TRANSFER TAXES AND RECORDATION REQUIREMENTS

### History and coverage

Until 1968 the Federal Government imposed a tax on the transfer of real property, at the rate of 55 cents per \$500 (or fraction thereof) of the selling price involved. The equivalent percentage rate is 0.11 percent.

Evidence of payment took the form of documentary stamps, affixed to the deed of conveyance at time of recordation. The stamps quickly became a source of sales data for local assessors and State taxation officials alike. It was nevertheless recognized early that verification of sales prices was definitely in order. One reason was the common practice of affixing more stamps than necessary, precisely to mislead the inquisitive. It was also a fact, in some circumstances, that stamps were affixed after recording. In other situations the tax was ignored and penalties risked.

The first State transfer tax was imposed in 1922 by Virginia, with South Carolina following the next year and Florida in 1931. Alabama, Maryland, Tennessee, and Washington passed transfer taxes prior to 1940. Transfer taxes now exist in 35 States, and there is in addition a \$2 transfer fee in Arizona, as detailed in table 17.

Local realty transfer taxes, listed in table 18, are authorized in 12 States, as follows:

California	Maryland	South Carolina
Delaware	New York	Virginia
District of Columbia	Ohio	Washington
Illinois	Pennsylvania	West Virginia

Of the above, California and the District of Columbia levy local transfer taxes only. The nation's capital added a 1 percent transfer tax on the seller to its existing 1 percent recordation tax on the buyer, effective August 1, 1980. Illinois has joined those authorizing local taxes within the last 5 years, now enabling Chicago to levy a tax of \$5 per \$5,000 of sales price, for transfers involving a price of \$500 or more.

As in the earlier study 5 years ago, Kansas is included though the State has no transfer tax. It still requires, however, the filing of a certificate of value along with any deed presented for recordation.

Twenty-three of the States base the tax on full sales price. The twelve which use net sales price, i.e., the amount exclusive of that represented by mortgages, include South Carolina, reported in the full sales price group in the survey 5 years ago.

In Puerto Rico revenue authorities receive a copy of the notarized deed of purchase that documents any transfer of realty where the consideration exceeds \$25,000. It is likely that this requirement will be extended to all realty transfers in the near future.

### Rates and revenue

It is a common practice to refer to rates of transfer taxes as number of cents of tax for each group of dollars of sales price. In terms of percentage equivalents, the taxes range from 0.01 percent in Colorado to 2 percent in Delaware, as table I indicates. The rates in table I do not include the \$2 fee in Arizona. Reference to table 18 reveals that rates for local transfer taxes fall within the middle parts of that same range.

Among State taxes there have been at least six substantive changes since the survey for 1974, five of them rate increases, in the following States: Massachusetts, New Hampshire, New Jersey, Oklahoma, and Rhode Island. In Florida the basic realty transfer tax increased from 30 cents to 40 cents per \$100, effective October 1, 1979. On the same day, however, the repeal of an existing surtax of 55 cents per \$500 became effective.

Amounts of revenue from State transfer taxes go to State or local governments exclusively, or to State and local governments on a specified sharing basis, in accordance with prevailing statutes. Collections from local transfer taxes accrue to the levying governments.

Transfer tax revenue reflects in part the volume of real property transactions, and the rates involved. In Pennsylvania collections from the State tax reached \$93.9 million in 1979, up from \$49.7 million 5 years earlier. The actual leader is Florida, where realty transfer tax revenue in 1979 approximated \$95 million, about three-fifths of the total collected from a variety of documentary levies. Virginia, Maryland, and Tennessee also report substantial collections in 1979, ranging from \$31.5 million to \$21.3 million, respectively. A summary of available data on State transfer tax revenue is contained in table J.

Table I. Rates, in Percent, State Realty Transfer Taxes

0.01	0.05	0.10	0.11	0.15	0.16
Colorado	Hawaii	Alabama Georgia Illinois Kentucky North Carolina Ohio South Dakota Washington Wisconsin	Connecticut Iowa Maine Michigan Nebraska Nevada New York	Oklahoma	Arkansas
0.20	0.22	0.228	0.25	0.26	0.35
South Carolina	Minnesota Rhode Island West Virginia	Massachusetts	New Hampshire Virginia	Tennessee	New Jersey
0.40	0.50	0.61	1.0	1.45 (1979)	2.0
Florida	Vermont	Maryland	Pennsylvania	Indiana (1.4 in 1980)	Delaware

Table J. State Tax Revenue, Realty Transfer Taxes: 1974 and 1979

(Thousands of dollars)

State	1974	1979	State	1974	1979
Alabama . . . . .	642	1,201	Nebraska . . . . .	829	1,825
Arizona . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	Nevada . . . . .	678	* 1,872
Arkansas . . . . .	1,502	2,718	New Hampshire . . . . .	1,053	3,412
Colorado . . . . .	( <sup>2</sup> )	( <sup>2</sup> )	New Jersey . . . . .	—	18,247
Connecticut . . . . .	( <sup>2</sup> )	( <sup>2</sup> )	New Mexico . . . . .	—	—
Delaware . . . . .	7,955	11,191	New York . . . . .	8,785	11,365
Florida . . . . .	<sup>3</sup> 98,327	<sup>3</sup> 157,780	North Carolina . . . . .	( <sup>2</sup> )	( <sup>2</sup> )
Georgia . . . . .	4,425	5,705	Ohio . . . . .	( <sup>2</sup> )	( <sup>2</sup> )
Hawaii . . . . .	1,044	1,857	Oklahoma . . . . .	1,873	4,524
Idaho . . . . .	—	—	Pennsylvania . . . . .	49,722	93,913
Illinois . . . . .	3,612	8,104	Rhode Island . . . . .	503	1,401
Indiana . . . . .	( <sup>4</sup> )	( <sup>4</sup> )	South Carolina . . . . .	<sup>5</sup> 6,091	<sup>5</sup> 9,242
Iowa . . . . .	1,464	3,077	South Dakota . . . . .	( <sup>2</sup> )	( <sup>2</sup> )
Kentucky . . . . .	<sup>5</sup> 1,857	<sup>5</sup> 1,161	Tennessee . . . . .	11,751	21,264
Maine . . . . .	—	890	Vermont . . . . .	1,618	3,291
Maryland . . . . .	14,695	27,614	Virginia . . . . .	<sup>7</sup> 17,129	<sup>7</sup> 31,515
Massachusetts . . . . .	7,802	12,415	Washington . . . . .	1,997	7,468
Michigan . . . . .	( <sup>2</sup> )	( <sup>2</sup> )	West Virginia . . . . .	1,515	3,027
Minnesota . . . . .	4,730	10,808	Wisconsin . . . . .	1,297	2,649
Mississippi . . . . .	—	—			

Note: 1979 figures are preliminary.

Sources: *State Tax Collections in 1975*, GF 75, No. 1, December 1975, table 10; and *State Tax Collections in 1979*, GF 79, No. 1, January 1980, table 9, U.S. Bureau of the Census, Washington, D.C.

— Represents zero or rounds to zero.

<sup>1</sup> Revenue from Arizona \$2 not separately available.<sup>2</sup> Revenue from transfer tax, locally collected and retained. Figures not available.<sup>3</sup> Amounts reported include transfer tax revenue from realty, stocks, and notes. Total for realty transfer taxes in 1979 approximates \$95 million.<sup>4</sup> Amounts collected constitute a part of income tax revenue, and are not separately available.<sup>5</sup> Amounts reported include taxes on deeds, mortgages, and other documents. Separate revenue components not available.<sup>6</sup> Information relative to 1980 indicates local collection and retention of revenue.<sup>7</sup> Includes an unidentifiable amount for land contracts.

## Implementation

The best way to implement a realty transfer tax, in terms of usefulness to assessors, is to require the filing, at time of deed recordation, of an affidavit, or at minimum a declaration, revealing the sales price. If that filing can be made a prerequisite to recordation or registration, the usefulness is further enhanced. Twenty-two States require an affidavit (sworn statement) or declaration as part of transfer tax administration, as shown in table 17. This includes the certificate of value required in Kansas, where there is no transfer tax. The count also includes Rhode Island, where a statement must be filed if the price is not otherwise shown.

The same number of States (some in the first group also) provides for the affixing of documentary stamps to deeds of conveyance. Other States use an imprint of some kind on the deed as evidence of transfer tax compliance.

Local governments may require affidavits or declarations also, as shown in table 18. New York City and places in Pennsylvania and Washington are examples.

Sales price information contained in transfer tax documentation is usually made available promptly to assessors, often according to specific statutory provision. Such data constitute an integral part of the empirical base for local and State assessment ratio studies.

## Enforcement

States commonly exempt certain types of transfers (e.g., those between relatives, or between exempt institutions) from transfer taxes.

For those subject to taxes, however, penalties can be of the type likely to command attention, as tables 17 and 18 indicate. Where sworn statements are involved, penalties for perjury are possible. Substantial fines, and even imprisonment, can result. In Maine the fine can reach \$5,000, and in Massachusetts imprisonment can be for as long as 1 year.

The basic purpose of transfer taxes, however, is achievement of a dual goal, revenue yield and sales price disclosure. Of the two, the latter is obviously of singular utility in the improvement of property tax administration.



Table 1. Number of Primary Assessing Jurisdictions, by Type of Government, by State: 1979

State	Total	Counties <sup>1</sup>	Municipalities	Townships	Other	State	Total	Counties <sup>1</sup>	Municipalities	Townships	Other
United States....	13,439	2,473	1,829	9,133	4	Missouri.....	418	91	*1	326	-
Alabama.....	67	67	-	-	-	Montana.....	1	-	-	-	*1
Alaska.....	25	11	14	-	-	Nebraska.....	93	93	-	-	-
Arizona.....	14	14	-	-	-	Nevada.....	17	17	-	-	-
Arkansas.....	75	75	-	-	-	New Hampshire.....	234	-	13	*221	-
California.....	58	*58	-	-	-	New Jersey.....	567	-	335	232	-
Colorado.....	63	*63	-	-	-	New Mexico.....	32	32	-	-	-
Connecticut.....	169	-	20	*149	-	New York.....	983	2	*62	*919	-
Delaware.....	3	3	-	-	-	North Carolina.....	100	100	-	-	-
District of Columbia..	1	-	*1	-	-	North Dakota.....	1,760	29	371	1,360	-
Florida.....	67	*67	-	-	-	Ohio.....	88	88	-	-	-
Georgia.....	159	*159	-	-	-	Oklahoma.....	77	77	-	-	-
Hawaii.....	1	-	-	-	-	Oregon.....	36	36	-	-	-
Idaho.....	44	44	-	-	*1	Pennsylvania.....	67	*67	-	-	-
Illinois.....	1,404	*19	-	*1,385	-	Rhode Island.....	39	-	*8	*31	-
Indiana.....	1,008	-	-	1,008	-	South Carolina.....	46	46	-	-	-
Iowa.....	118	99	19	-	-	South Dakota.....	70	*64	6	-	-
Kansas.....	105	105	-	-	-	Tennessee.....	95	*95	-	-	-
Kentucky.....	120	*120	-	-	-	Texas.....	254	*254	-	-	-
Louisiana.....	66	*64	-	-	-	Utah.....	29	29	-	-	-
Maine.....	499	-	22	*476	1	Vermont.....	249	3	9	*237	-
Maryland.....	1	-	-	-	*1	Virginia.....	136	95	*41	-	-
Massachusetts.....	351	-	39	*312	-	Washington.....	39	39	-	-	-
Michigan.....	1,510	-	265	1,245	-	West Virginia.....	55	55	-	-	-
Minnesota.....	97	87	10	-	-	Wisconsin.....	1,826	1	593	*1,232	-
Mississippi.....	82	82	-	-	-	Wyoming.....	23	23	-	-	-

- Represents zero or rounds to zero.

<sup>1</sup>Includes boroughs in Alaska (3 of which include home rule cities of Anchorage, Juneau and Sitka) and parishes in Louisiana. Total for Louisiana includes Orleans Parish, where the 7 district assessors comprise a board of assessors with one of their number elected as board president.

<sup>2</sup>Each respective State total affected includes the following city-counties or city-county consolidations: San Francisco, California; Denver, Colorado; Jacksonville-Duval, Florida; Columbus-Muscogee, Georgia; Lexington-Fayette, Kentucky; Baton Rouge-East Baton Rouge and New Orleans-Orleans, Louisiana; Philadelphia, Pennsylvania; Nashville-Davidson, Tennessee.

<sup>3</sup>Total shown consists of towns for Connecticut, Massachusetts, New Hampshire, New York, Rhode Island, Vermont and Wisconsin. Total shown for Maine consists of 429 towns and 47 plantations.

<sup>4</sup>Each respective State total affected includes the following cities performing county type functions: Washington, D.C.; St. Louis, Mo.; New York City; 8 cities in Rhode Island; and 41 "independent cities" in Virginia.

<sup>5</sup>The State is currently responsible for assessment administration in Hawaii. Effective July 1, 1981 each of 4 counties will assume responsibility for assessment administration. The 5th county, Kalawao, which is used as a treatment center for those afflicted with Hansen's disease, remains a State responsibility. See text.

<sup>6</sup>Includes Cook County, headed by an elected county assessor (see also footnote 7); St. Clair County, headed by an elected 5-person board of assessors, and 17 commissioner counties each headed by an appointed county assessor.

<sup>7</sup>There are elected township assessors in the 83 counties having township government. This category formerly included also 22 elected township assessors in St. Clair County who had initial assessing responsibility for personal property only, with realty assessing the responsibility of the board of assessors. Personal property, however, is now exempt in Illinois (effective January 1, 1979). There are 30 elected township assessors in Cook County who, now like those in St. Clair County, have no "explicit" assessing functions. Finally, there are 8 inactive townships within the city of Chicago.

<sup>8</sup>In Maryland, local assessors and their clerical staffs became employees of the State on July 1, 1976 and July 1, 1975, respectively. In Montana county assessors became agents of the State Department of Revenue, effective July 1, 1973. Each State is considered a primary assessing jurisdiction for the summation contained in this table; this treatment varies from previous reports where the counties and Baltimore city were considered the primary assessing jurisdictions.

<sup>9</sup>Totals for South Dakota do not include 2 county areas (Shannon and Todd) that have no organized county government. These county areas depend on the assessors in Fall River and Tripp Counties, respectively, for their assessment administration. Washabaw County was consolidated with Jackson County effective January 1, 1979.

<sup>10</sup>In addition to 254 primary assessing jurisdictions (counties), Texas has in 1979 at least 2,388 overlapping assessing (and taxing) jurisdictions as follows: 18 road districts, 800 cities, 1,073 independent school districts, 43 junior college districts, 77 hospital districts and 377 other special districts. Information from *Taxing Jurisdictions of Texas, Market Values, Assessed Valuations, Basis of Assessment and Tax Rates - 1979*, Texas municipal report, special report No. 131, Municipal Advisory Council of Texas, Austin, March 20, 1980. Each of overlapping jurisdictions normally has its own assessor. Often, however, the city assessor also (by contract) assesses for the overlapping school district, and/or for some other unit. The reverse also occurs. A 3rd less frequent possibility is that the county assessor will also (by contract) act as the assessor for a school district or other unit. Though the exact number is not known, it is unlikely that the total number of individual assessors in Texas would exceed 2,500. Whatever the number, it will decrease when the 1979 legislation becomes fully implemented on January 1, 1982, barring amendment before that. A central provision is creation of an appraisal district in each county coterminous with it, headed by a chief appraiser.

## STATE AND LOCAL RATIO STUDIES

Table 2. Scope of State Ratio Studies

State	Most recent study completed in	Usual frequency of study <sup>1</sup>	Market value indicators used <sup>2</sup>		Distribution of results		Costs associated with study	
			Occurred over period indicated	Were compared with assessed values as of date preceding or following sale <sup>3</sup>	Published	Otherwise available to public or not, as indicated	Amount (thousands of dollars)	Time
Alabama.....	1970	I	9 months	P		Not obtainable	80	1 year
Alaska.....	1979	A	2 years	F	Yes		(NA)	(NA)
Arizona.....	1979	D	3 years	F	Yes		17	4 months
Arkansas.....	1979	A	1 year	P	Yes		(NA)	(NA)
California.....	1977	<sup>4</sup> A	1 year	<sup>4</sup> P	<sup>4</sup> Yes	( <sup>4</sup> )	(NA)	(NA)
Colorado.....	1976	I	6 months	P	In part	In part	60	1 year
Connecticut.....	1980	A	1 year	P	Yes		(NA)	1 year
Florida.....	1979	<sup>5</sup> A, E	1 year	F	<sup>5</sup> Yes	( <sup>5</sup> )	(NA)	1 year
Georgia.....	1979	A	1 year	F		Obtainable	300	1 year
Hawaii.....	1979	A	1 year	P		Obtainable	25	6 months
Idaho.....	1979	A	1 year	F	Yes		98	1 year
Illinois.....	1979	A	1 year	P	Yes		160	1 year
Indiana.....	1974	<sup>6</sup> G	1 year	P		Obtainable	(NA)	(NA)
Iowa.....	1978	A	1 year	P	Yes		55	(NA)
Kansas.....	1979	A	1 year	P, F	Yes		(NA)	(NA)
Kentucky.....	1980	A	13 months	P	Yes		23	7 months
Louisiana.....	1978	A	3 months	P	Yes		(NA)	6 months
Maine.....	1979	A	1 year	P, F		Obtainable	250	1 year
Maryland.....	1979	A	1 year	P		Obtainable	31	9 months
Massachusetts.....	1978	B	18 months	F	Yes		300	26 months
Michigan.....	1978	A	30 months	P, F		Obtainable	(NA)	1 year
Minnesota.....	1978	A	3 years	P, F	Yes		490	15 months
Missouri.....	1980	A	6 months	P		Obtainable	626	1 year
Montana.....	1979	A	5 years	P, F	Yes		65	5 years
Nebraska.....	1978	A	1 year	P	Yes		10	1 year
Nevada.....	1979	A	3 years	P, F	Yes		18	7 months
New Hampshire.....	1979	A	1 year	P, F	Yes		47	1 year
New Jersey.....	1979	A	1 year	P	Yes		53	16 months
New Mexico.....	1980	A	1 year	F	Yes		(NA)	6 months
New York.....	1978	B	( <sup>7</sup> )	P, F		Obtainable	6,000	2 years
North Dakota.....	1978	<sup>8</sup> B	1 year	P, F		Obtainable	(NA)	(NA)
Ohio.....	( <sup>9</sup> )	C	6 months	F	Yes		462	1 year
Oklahoma.....	1978	A	1 year	F	Yes		120	1 year
Oregon.....	( <sup>10</sup> )	A	1 Year	P, F	Yes		<sup>11</sup> 140	21 months
Pennsylvania.....	1979	A	5 years	P, F		Not obtainable	847	1 year
Rhode Island.....	1978	A	6 months	P, F	Yes		(NA)	(NA)
South Carolina.....	1980	A	1 year	P		Obtainable	(NA)	(NA)
South Dakota.....	1979	A	3 years	P, F	Yes		15	1 year
Tennessee.....	1977	I	1 year	P	Yes		100	6 months
Texas.....	1978	B	3 months	P		Obtainable	1,800	7 months
Utah.....	1979	A	<sup>12</sup> Variable	<sup>12</sup> P, F	Yes		50	<sup>12</sup> 2 months
Vermont.....	1978	B	15 months	F	Yes		300	10 months
Virginia.....	1979	A	1 year	P	Yes		(NA)	1 year
Washington.....	1979	A	8 months	P, F	Yes		750	1 year
West Virginia.....	1979	A	1 year	P		Obtainable	9	8 months
Wisconsin.....	1979	A	<sup>13</sup> 1 year	P, F		Obtainable	50	6 months

NA Not available.

<sup>1</sup>A=Annual 8=Biennial C=Semiannual D=Thrice per year E=Quadrennially G=Every 6 years I=Irregularly<sup>2</sup>Sales prices or appraisal estimates, as elsewhere indicated in this report.<sup>3</sup>P=Valuation date preceding sale F=Valuation date following sale.<sup>4</sup>Ratio studies as such have been discontinued since implementation of Proposition 13. As formerly done, they were based on appraisals only, sales were not used. Statewide and county ratios were published, ratios by property use category were available, but not published. In 1980, State is beginning studies to determine "ratios of conformity" to measure conformance with existing law.<sup>5</sup>Annual studies use unverified sales, quadrennial studies use verified sales and appraisals. Results of quadrennial study are published.<sup>6</sup>A ratio study may be conducted at time of reassessment. State law requires a reassessment every six years.<sup>7</sup>State uses only appraisals, no sales. In 1978 study State used appraisals as of July 1, 1976.<sup>8</sup>Updated annually.<sup>9</sup>1977 most recent year for all county coverage (88 counties). For 1978 coverage extended to 47 counties; for 1979 to 23 counties.<sup>10</sup>1979: Final study. 1980: Preliminary study.<sup>11</sup>In addition to State costs shown, counties incurred costs of \$710,000.<sup>12</sup>Length of sales period depends on volume of sales, with respect to each county. Applicable valuation date also varies from county-to-county. Processing time two months.<sup>13</sup>One year sales period plus three year history file.



Table 3. Jurisdictional Classifications for Which State Agencies Derive Ratios, by Status of Ratio and by State

State	State	Counties	Municipalities	School districts	Townships <sup>1</sup>	State	State	Counties	Municipalities	School districts	Townships <sup>1</sup>
Alabama.....	OF	OF	-	-	-	Montana.....	OF	OF	OF	-	-
Alaska.....	OF	-	-	-	-	Nebraska.....	( <sup>3</sup> )	( <sup>3</sup> )	-	-	-
Arizona.....	OF	OF	-	-	-	Nevada.....	( <sup>3</sup> )	OF	-	-	-
Arkansas.....	OF	OF	OF	OF	-	New Hampshire.....	OF	OF	OF	-	OF
California <sup>2</sup> .....	( <sup>3</sup> )	OF	-	-	-	New Jersey.....	( <sup>3</sup> )	( <sup>3</sup> )	OF	-	-
Colorado.....	( <sup>3</sup> )	OF	OF	-	-	New Mexico.....	( <sup>3</sup> )	( <sup>3</sup> )	-	-	-
Connecticut.....	( <sup>3</sup> )	-	( <sup>3</sup> )	-	OF	New York.....	( <sup>3</sup> )	OF	OF	-	OF
Florida.....	UC	OF	-	OF	-	North Dakota.....	OF	OF	-	-	-
Georgia.....	OF	OF	OF	-	-	Ohio.....	OF	OF	OF	-	OF
Hawaii.....	OF	OF	-	-	-	Oklahoma.....	OF	OF	-	-	-
Idaho.....	OF	OF	-	-	-	Oregon.....	( <sup>3</sup> )	OF	-	-	-
Illinois.....	<sup>4</sup> OF	OF	OF	-	-	Pennsylvania.....	OF	OF	OF	OF	OF
Indiana.....	( <sup>3</sup> )	( <sup>3</sup> )	-	OF	-	Rhode Island.....	OF	-	OF	-	OF
Iowa.....	( <sup>3</sup> )	OF	-	-	-	South Carolina.....	-	OF	-	OF	-
Kansas.....	OF	OF	-	-	-	South Dakota.....	OF	OF	OF	-	-
Kentucky.....	UC	OF	-	-	-	Tennessee.....	OF	OF	-	-	-
Louisiana.....	OF	OF	-	-	-	Texas.....	( <sup>3</sup> )	( <sup>3</sup> )	-	OF	-
Maine.....	( <sup>3</sup> )	-	OF	-	OF	Utah.....	OF	OF	OF	-	-
Maryland.....	( <sup>3</sup> )	OF	UC	-	-	Vermont.....	( <sup>3</sup> )	-	OF	OF	OF
Massachusetts.....	( <sup>3</sup> )	-	OF	-	OF	Virginia.....	( <sup>3</sup> )	OF	<sup>5</sup> OF	OF	-
Michigan.....	OF	OF	OF	-	OF	Washington.....	UC	OF	-	-	-
Minnesota.....	OF	OF	OF	OF	OF	West Virginia.....	OF	OF	-	-	-
Missouri.....	( <sup>3</sup> )	OF	-	-	-	Wisconsin.....	UC	UC	OF	-	OF

Explanation of codes used is as follows:

OF (Officially found) - Refers to ratios computed to satisfy prescribed requirements associated with publication of results, an aid distribution formula, or similar purpose not confined to internal analysis. In certain instances the computation of such ratios is in compliance with a specific statutory provision, or with a general statutory directive.

UC (Unofficially calculated) - Refers to ratios calculated as an aid to internal analysis within the State agency having responsibilities affecting local assessment administration, and/or within the local assessing jurisdictions affected.

- Indicates no ratio derived.

<sup>1</sup>Designation "Township" refers to towns in Connecticut, Massachusetts, New Hampshire, New York, Rhode Island, Vermont, and Wisconsin.

<sup>2</sup>Ratio studies as such have been discontinued since implementation of Proposition 13. As formerly done, only Statewide and county ratios were derived.

<sup>3</sup>Available data do not rule out possible applicability, at least for unofficial calculation.

<sup>4</sup>Statewide ratios for nonfarm property only.

<sup>5</sup>"Independent" cities only.

Table 4. Area Locations for Which State Agencies Derive Ratios, by Status of Ratio and by State

State	Urban		Suburban	Rural	State	Urban		Suburban	Rural
	Entire area	Neighborhoods				Entire area	Neighborhoods		
Alabama.....	OF	-	-	OF	Michigan.....	OF	-	OF	OF
Alaska.....	( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>2</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Minnesota.....	UC	UC	UC	UC
Arizona.....	( <sup>1</sup> )	<sup>3</sup> OF	( <sup>1</sup> )	( <sup>1</sup> )	Nebraska.....	OF	-	-	OF
Arkansas.....	OF	OF	OF	OF	Nevada.....	OF	-	-	OF
California <sup>4</sup> .....	-	-	-	-	New Jersey.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Colorado.....	( <sup>1</sup> )	OF	( <sup>1</sup> )	( <sup>1</sup> )	North Dakota.....	OF	-	-	OF
Georgia.....	OF	-	OF	OF	Ohio.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Hawaii.....	-	<sup>2</sup> OF	-	OF	Oregon.....	<sup>5</sup> UC	<sup>5</sup> UC	<sup>5</sup> UC	<sup>5</sup> UC
Idaho.....	OF	-	-	OF	South Carolina.....	UC	-	-	UC
Illinois.....	OF	-	-	-	South Dakota.....	OF	-	-	OF
Iowa.....	OF	-	OF	OF	Utah.....	OF	OF	OF	OF
Kansas.....	OF	-	-	OF	Vermont.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Maine.....	OF	-	-	OF	Wisconsin.....	UC	OF	UC	UC

Explanation of codes used in copy is as follows:

OF (Officially found) - Refers to ratios computed to satisfy prescribed requirements associated with publication of results, an aid distribution formula, or similar purpose not confined to internal analysis. In certain instances the computation of such ratios is in compliance with a specific statutory provision, or with a general statutory directive.

UC (Unofficially calculated) - Refers to ratios calculated as an aid to internal analysis within the State agency having responsibilities affecting local assessment administration, and/or within the local assessing jurisdictions affected.

- Indicates no ratio derived.

<sup>1</sup>Available data do not rule out possible applicability, at least for unofficial calculations.

<sup>2</sup>In Alaska, "neighborhoods" have been designated as "service areas." In Hawaii, subjurisdictional areas are designated as "tax zones," which in some instances are equivalent to neighborhoods, or groups thereof.

<sup>3</sup>Ratio studies for city neighborhoods in future plans.

<sup>4</sup>Ratio studies as such have been discontinued since implementation of Proposition 13.

<sup>5</sup>Specially authorized when deemed necessary.

Table 5. Property Use Categories for Which State Agencies Derive Ratios, by Status of Ratio and by State

State	All types of realty treated as a single group	Realty										Person- alty, all use categor- ies (as a single group)	Public utili- ties
		All	Single- family	Multi- family	Commer- cial	Indus- trial	Agricul- tural	Vacant land	Timber- land	Mineral rights	Other realty		
Alabama.....	-	-	-	-	-	-	-	-	-	-	-	-	-
Alaska.....	OF	-	-	-	-	-	-	-	-	-	-	-	-
Arizona.....	(1)	OF	OF	OF	OF	OF	OF	OF	OF	-	-	-	-
Arkansas.....	OF	OF	OF	OF	OF	OF	OF	-	-	-	Rurban (rural-urban periphery)	OF	-
California <sup>2</sup> .....	-	UC	UC	UC	UC	UC	UC	UC	UC	UC	-	UC	OF
Colorado.....	-	OF	-	-	OF	OF	OF	OF	UC	-	-	-	-
Connecticut.....	-	UC	-	-	UC	UC	-	UC	-	-	-	-	-
Florida.....	OF	OF	OF	OF	OF	OF	OF	OF	OF	-	-	-	-
Georgia.....	OF	OF	OF	OF	OF	OF	OF	-	-	-	-	-	UC
Hawaii.....	-	OF	OF	OF	OF	OF	OF	-	OF	-	-	-	-
Idaho.....	-	OF	OF	-	OF	-	OF	OF	OF	-	Mobile homes	-	-
Illinois.....	(2)	(4)	-	(4)	(4)	(4)	-	(4)	-	-	-	-	-
Indiana.....	-	OF	-	-	OF	OF	OF	-	-	-	-	-	-
Iowa.....	-	OF	OF	-	OF	OF	OF	-	-	-	-	-	-
Kansas.....	-	OF	OF	OF	OF	OF	OF	OF	-	-	Recreational property	-	-
Kentucky.....	-	OF	-	-	(5)	(5)	OF	-	-	-	-	-	-
Louisiana.....	-	OF	OF	OF	OF	OF	OF	OF	OF	-	-	-	-
Maine.....	-	OF	OF	OF	OF	OF	OF	-	-	-	-	-	-
Maryland.....	-	OF	OF	(6)	(6)	(6)	OF	-	-	-	-	-	-
Massachusetts.....	OF	-	-	-	-	-	-	-	-	-	-	-	-
Michigan.....	-	OF	OF	OF	OF	OF	OF	OF	OF	-	-	OF	OF
Minnesota.....	-	OF	OF	OF	OF	OF	OF	UC	UC	UC	-	UC	UC
Missouri.....	-	UC	UC	-	UC	UC	UC	-	-	-	-	-	-
Montana.....	OF	OF	OF	OF	OF	OF	(7)	OF	-	-	-	-	-
Nebraska.....	-	OF	OF	OF	OF	OF	OF	OF	-	-	-	-	-
Nevada.....	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	-	-	(8)	(8)	(8)
New Hampshire.....	OF	-	-	-	-	-	-	-	-	-	-	-	-
New Jersey.....	-	OF	8OF	8OF	OF	OF	OF	OF	-	-	-	-	-
New Mexico.....	-	UC	-	-	UC	-	-	(10)	-	-	-	-	-
New York.....	-	OF	(11)	OF	OF	OF	OF	OF	-	-	-	-	OF
North Dakota.....	-	UC	UC	-	UC	UC	UC	UC	-	-	-	-	-
Ohio.....	-	OF	-	-	OF	OF	OF	OF	OF	-	-	-	-
Oklahoma.....	-	OF	OF	-	(5)	(5)	OF	-	-	-	-	-	-
Oregon.....	-	OF	OF	OF	OF	OF	OF	OF	OF	-	Recreation and tract property	OF	-
Pennsylvania.....	OF	OF	OF	OF	OF	OF	OF	OF	OF	OF	-	-	-
Rhode Island.....	-	OF	OF	OF	OF	OF	-	OF	-	-	-	-	-
South Carolina.....	-	OF	OF	OF	OF	-	OF	-	-	-	-	-	-
South Dakota.....	-	OF	-	-	OF	-	OF	-	-	-	-	-	-
Tennessee.....	-	OF	OF	(12)	(5) (12)	(5)	OF	-	-	-	-	-	-
Texas.....	OF	OF	OF	OF	OF	OF	OF	OF	OF	OF	-	OF	OF
Utah.....	-	OF	OF	OF	OF	-	-	OF	-	-	-	-	-
Vermont.....	-	OF	-	-	OF	OF	OF	OF	OF	-	-	OF	OF
Virginia.....	OF	OF	OF	OF	OF	OF	OF	-	-	-	-	-	-
Washington.....	OF	OF	OF	OF	OF	OF	OF	OF	OF	OF	-	OF	OF
West Virginia.....	-	OF	-	-	OF	OF	-	OF	-	-	-	-	-
Wisconsin.....	-	OF	-	-	OF	OF	OF	OF	OF	-	Swamp and waste land	-	-

Explanation of codes used is as follows:

OF (Officially found) - Refers to ratios computed to satisfy prescribed requirements associated with publication of results, an aid distribution formula, or similar purpose not confined to internal analysis. In certain instances the computation of such ratios is in compliance with a specific statutory provision, or with a general statutory directive.

UC (Unofficially calculated) - Refers to ratios calculated as an aid to internal analysis within the State agency having responsibilities affecting local assessment administration, and/or within the local assessing jurisdictions affected.

- Indicates no ratio derived.

<sup>1</sup>Available data do not rule out possible applicability, at least for unofficial calculations.

<sup>2</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.

<sup>3</sup>"All Realty" as a single group unofficially calculated for downstate only.

<sup>4</sup>Officially found ratios for Cook County.

<sup>5</sup>"Commercial and industrial" combined for single ratio.

<sup>6</sup>"Multifamily, commercial and industrial" combined for single ratio.

<sup>7</sup>In Montana agricultural land is assessed on a basis other than market value, hence agricultural sales are not used in ratio calculations.

<sup>8</sup>Calculation of ratios by use category for each county, subject to the nature and volume of sales reported. Other realty refers to realty located outside a municipality, i.e., rural-urban, subdivided lots, or parcels.

<sup>9</sup>In New Jersey "single family residence" category can include structures with up to 4 apartment units; "multifamily" category can include structures with 5 or more apartment units.

<sup>10</sup>"Vacant land" ratios unofficially calculated for residential and commercial categories.

<sup>11</sup>Ratios for "single family" category likely to include those for limited "multifamily" use.

<sup>12</sup>State classifies multifamily structures with 3 or more units as commercial.

Table 6. Major Characteristics of State Ratio Studies

State	Administrative agency	Value indicators used		Data collection by local officials		Reported estimate, gross total, all transfers, entire period of study <sup>1</sup>
		Sales	Appraisals	For assessed values	For transfer information	
Alabama.....	State Department of Revenue, Ad Valorem Tax Division....	Yes	No	Tax assessors	Probate office	122,488
Alaska.....	State Tax Assessor.....	Yes	No	Local tax assessors	Recording official	(NA)
Arizona.....	Department of Revenue.....	Yes	No	County assessors, or State officials	County recorders	300,000
Arkansas.....	Assessment Coordination Division.....	Yes	B	County assessors	County clerks	(NA)
California.....	State Board of Equalization.....	No	<sup>2</sup> Yes	(X)	(X)	( <sup>2</sup> )
Colorado.....	Department of Revenue.....	Yes	A	County assessors	County assessors	50,000
Connecticut.....	Department of Revenue Services.....	Yes	No	Town assessor	Town clerk	99,600
Florida.....	Department of Revenue.....	Yes	A	Property appraiser	Property appraiser	<sup>3</sup> 131,140
Georgia.....	Department of Audits and Accounts.....	Yes	B	-	County clerk	235,525
Hawaii.....	Department of Taxation.....	Yes	No	(X)	(X)	(NA)
Idaho.....	Department of Revenue and Taxation.....	Yes	A	County assessors	County recorders	25,044
Illinois.....	Department of Revenue, Property Tax Administration Bureau.....	Yes	No	County and township assessors	County recorders	400,000
Indiana.....	Board of Tax Commissioners.....	No	C	County and township assessors	(X)	(X)
Iowa.....	Department of Revenue, Property Tax Division.....	Yes	B	County assessors	County recorders	160,000
Kansas.....	Department of Revenue, Division of Property Valuation.....	Yes	B	County appraisers	County registers of deeds	98,335
Kentucky.....	Department of Revenue, Research Division.....	Yes	No	Property valuation administrators	County clerks	250,000
Louisiana.....	State Tax Commission.....	Yes	B	Parish assessors	Clerk of the court	10,000
Maine.....	Bureau of Taxation, Property Tax Division.....	Yes	A	Town assessors	-	60,000
Maryland.....	State Department of Assessments and Taxation.....	Yes	A	Supervisors of assessment <sup>4</sup>	( <sup>4</sup> )	125,000
Massachusetts.....	Department of Revenue, Bureau of Local Assessment.....	Yes	A	Assessors	Town assessors	160,000
Michigan.....	State Tax Commission.....	Yes	B	Local assessors and equalization officials	County registers of deeds	(NA)
Minnesota.....	Department of Revenue, Local Government Aids and Analysis Division.....	Yes	No	County assessors	-	<sup>5</sup> 300,000
Missouri.....	State Tax Commission.....	No	C	(X)	(X)	(X)
Montana.....	Department of Revenue, Property Valuation Division.....	Yes	No	County appraisers (State employees)	County clerks and recorders	<sup>6</sup> 40,000
Nebraska.....	Department of Revenue.....	Yes	B	County assessors	Registers of deeds	80,000
Nevada.....	Department of Taxation, Division of Assessment Standards	Yes	B	County assessors	County recorders	60,000
New Hampshire.....	Department of Revenue Administration, Property Appraisal Division.....	Yes	No	Selectmen of town/city, city and town assessors	Selectmen of town/city, city and town assessors	47,700
New Jersey.....	Department of Treasury, Division of Taxation.....	Yes	No	Tax assessors	County registrars	205,644
New Mexico.....	Taxation and Revenue Department, Property Tax Division.....	Yes	No	County assessors	County assessors	(NA)
New York.....	Division of Equalization and Assessment.....	No	C	(X)	(X)	(X)
North Dakota.....	State Tax Department.....	Yes	No	County auditors	County registers of deeds	(NA)
Ohio.....	Department of Tax Equalization.....	Yes	A	County auditors	County recorders	<sup>7</sup> 467,884
Oklahoma.....	Tax Commission, Ad Valorem Tax Division.....	Yes	<sup>8</sup> B	County assessors	County clerks	20,000
Oregon.....	Department of Revenue, Assessment and Appraisal Division	Yes	A	County assessors	County assessors	150,000
Pennsylvania.....	State Tax Equalization Board.....	Yes	No	Assessors	Recorders of deeds	<sup>9</sup> 322,253
Rhode Island.....	Department of Community Affairs, Supervisor of Equalization.....	Yes	No	Local assessors	Local assessors	19,000
South Carolina.....	State Tax Commission, Property Tax Division.....	Yes	A	County assessors	County assessors	42,500
South Dakota.....	Department of Revenue, Property Tax Division.....	Yes	No	Director of equalization	Director of equalization	<sup>10</sup> 75,000
Tennessee.....	Division of Property Assessment.....	Yes	No	Assessors of property	Registers of deeds	200,000
Texas.....	State Property Tax Board.....	Yes	B	Tax assessors-collectors	County clerk	(NA)
Utah.....	State Tax Commission, Local Valuation Division.....	Yes	No	County assessors	County recorders	30,000
Vermont.....	Division of Property Taxation.....	Yes	A	Town listers (assessors)	Town clerks	15,000
Virginia.....	Department of Taxation, Property Tax Division.....	Yes	No	Commissioners of revenue	Clerks of circuit court	(NA)
Washington.....	Department of Revenue, Property Tax Division.....	Yes	A	County assessors	County treasurers	185,308
West Virginia.....	State Tax Department, Local Government Relations Division.....	Yes	B	County assessors	County clerks	12,000
Wisconsin.....	Department of Revenue, Assessment Practices Division.....	Yes	No	City and town assessors	County registers of deeds	210,000

See footnotes at end of table.

Table 6. Major Characteristics of State Ratio Studies—Continued

State	Sample size (before screening) <sup>1)</sup>	Use of sales							Remarks
		Screening occurs--			Price verification by--				
		At time of enumeration	When price verified	During statistical treatment	Personal interview	Telephone	Questionnaire <sup>10</sup>	Transfer tax or similar data, source as specified	
Alabama.....	10%	Yes	Yes	Yes	Yes	Yes	-	Inspection of transfer tax data	
Alaska.....	(NA)	-	Yes	-	-	-	U31(15,000)	No transfer tax	
Arizona.....	78%	-	Yes	-	-	-	-	Inspection of transfer fee data, including affidavits	
Arkansas.....	(NA)	-	-	Yes	Yes	Yes	-	Inspection of title company records and transfer tax data	
California....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	-	
Colorado.....	80%	-	-	Yes	-	-	-	Inspection of transfer tax data	
Connecticut...	53%	-	-	Yes	Yes	-	U45(49,300)	Inspection of transfer tax data	
Florida.....	(3)	-	Yes	Yes	-	-	<sup>2)</sup> U32(10,500)	-	
Georgia.....	64%	Yes	Yes	Yes	-	-	-	Inspection of transfer tax data	
Hawaii.....	8,215	-	-	Yes	-	-	-	Inspection of transfer tax affidavits	
Idaho.....	(11)	-	Yes	Yes	-	-	<sup>12)</sup> Yes	No transfer tax	
Illinois.....	21%	-	-	Yes	-	-	-	Inspection of real estate transfer declarations	
Indiana.....	(X)	-	-	-	-	-	-	State has tax on income derived by subject corporations from sales of realty	
Iowa.....	(13)	-	-	Yes	-	Yes	U25(31,000)	Inspection of real estate transfer records	
Kansas.....	73%	-	-	Yes	-	Yes	-	Inspection of certificates of value	
Kentucky.....	(14)	Yes	Yes	Yes	-	-	-	Inspection of transfer tax affidavits	Larger counties sampled, great deal of initial screening is done
Louisiana.....	10,000	Yes	-	-	-	-	-	No transfer tax	
Maine.....	46%	-	Yes	Yes	(NA)	(NA)	(NA)	Affidavits for property valuation are confidential	
Maryland.....	80%	-	-	Yes	-	-	-	Disclosure of sales price, a prerequisite to recording	
Massachusetts.	All sales	-	-	Yes	-	-	-	Price verified by tax assessors	
Michigan.....	(NA)	Yes	Yes	Yes	Yes	-	-	Affidavit usable only if land sales price is verifiable on disclosure	
Minnesota.....	90%	-	Yes	Yes	Yes	Yes	-	Inspection of certificates of real estate value	
Missouri.....	(X)	-	-	-	-	-	-	No transfer tax	
Montana.....	(15)	Yes	Yes	Yes	-	-	-	Inspection of realty transfer certificates	
Nebraska.....	(16)	Yes	-	-	-	-	-	Inspection of real estate transfer statements	
Nevada.....	50,000	-	-	Yes	Yes	-	-	Inspection of title company records by subpoena. Inspecting Declarations of Value.	
New Hampshire.	34%	Yes	Yes	Yes	-	-	<sup>17)</sup> U61(14,114)	Inspection of transfer tax data (State equalization survey forms, and stamps)	
New Jersey....	(18)	-	Yes	-	Yes	Yes	U39(28,418)	Inspection of transfer tax records, including affidavits; also, inspecting title company records	
New Mexico....	11,150	-	Yes	-	Yes	Yes	-	No transfer tax	
New York.....	(X)	-	-	-	-	-	-	-	
North Dakota..	(19)	<sup>20)</sup> Yes	-	-	Yes	Yes	(21)	No transfer tax	
Ohio.....	70%	-	Yes	Yes	-	-	-	Inspection of conveyance fee data	
Oklahoma.....	20,000	Yes	Yes	Yes	Yes	Yes	-	Inspection of transfer tax data	
Oregon.....	49%	Yes	Yes	Yes	Yes	Yes	(NA)	No transfer tax	Data for 1980 preliminary not yet available
Pennsylvania..	322,253	-	-	Yes	-	-	-	Inspection of transfer tax data including affidavits	
Rhode Island..	82%	-	-	Yes	-	-	-	Inspection of transfer tax data	
South Carolina	(22)	Yes	Yes	-	-	-	-	Inspection of transfer tax data	
South Dakota..	(23)	-	Yes	-	Yes	Yes	<sup>12)</sup> Yes	Inspection of transfer tax data and records of title companies	
Tennessee.....	14%	Yes	-	Yes	Yes	Yes	-	Inspection of transfer data	
Texas.....	(NA)	-	Yes	-	Yes	-	-	Inspection of title company records (no transfer tax)	
Utah.....	100%	-	Yes	Yes	Yes	Yes	U45(3,000)	Inspection of realty listings and bank records (no transfer tax)	
Vermont.....	100%	-	Yes	Yes	-	-	-	Inspection of property transfer returns	
Virginia.....	(24)	-	Yes	-	-	-	-	Inspection of recordation tax receipts	
Washington....	31%	Yes	Yes	Yes	-	-	-	Inspection of real estate excise tax affidavits	
West Virginia.	100%	-	-	Yes	-	-	-	Declarations of consideration	
Wisconsin.....	50%	-	-	Yes	-	-	-	Inspection of real estate transfer return	

Explanation of codes used in copy is as follows:

- A - For types infrequently sold.  
 B - Used to supplement sales.  
 C - Used exclusively.

- Data not relevant to nature of study, or relevance not indicated by data obtained. NA Not available. X Not applicable.  
<sup>1</sup>Estimate in each instance is gross number of transfers (including sales) during entire period involved, thus includes any subsequently discarded for any reason. EXTREME CAUTION should be used in any comparison of transfers reported here with measurable sales, e.g., those reported in table 9, Volume 2, 1977 Census of Governments. <sup>2</sup>Ratio studies as such have been discontinued since implementation of Proposition 13. <sup>3</sup>Data shown relate to "in-depth" review conducted in 19 counties only. Total number of sales in 46 counties for a "post audit" review was 393,467. <sup>4</sup>Supervisors of Assessment are State employees. <sup>5</sup>Three-year sales period. <sup>6</sup>Five-year sales period. <sup>7</sup>Apparent total of sales for 12 months. This figure includes 143,120 sales exempt from conveyance fees. <sup>8</sup>Appraisals used only for commercial-industrial properties. <sup>9</sup>Sample size before screening means gross number of sales in sample before any are discarded. Any percentage shown is a percentage of total number of transfers occurring as shown in adjacent column on the left. <sup>10</sup>The number following "U" is the percentage of usable responses in relationship to the total number of questionnaires, which is shown in parentheses. <sup>11</sup>Approximately 8,171 (33 percent) sales remained in the study after screening. <sup>12</sup>Number not available. <sup>13</sup>Approximately 120,000 (75 percent) sales remained in the study after screening. <sup>14</sup>Approximately 27,385 (11 percent) sales remained in the study after screening. <sup>15</sup>Approximately 9,785 (24 percent) sales remained in the study after screening. <sup>16</sup>Approximately 33,000 (42 percent) sales remained in the study after screening. <sup>17</sup>Cities of Manchester and Nashua were not included in mail canvass. <sup>18</sup>Approximately 94,215 (46 percent) sales remained in the study after screening. <sup>19</sup>Approximately 6,079 sales remained in the study after screening. <sup>20</sup>Includes any action by the county commissioners. <sup>21</sup>Questionnaires sent initially by counties. Quantity not available. <sup>22</sup>Approximately 27,500 (65 percent) sales remained in the study after screening. <sup>23</sup>Approximately 37,594 (50 percent) sales remained in the study after screening. <sup>24</sup>Most recent ratio study apparently used a sample of 56,000 sales.

Table 7. Categories of Sales or Other Transfers of Property Excluded From State Ratio Studies

State	Specified status or relationship of/or between grantor and/or grantee					Transfers of convenience <sup>2</sup>	Foreclosure or other such legal action	Miscella- neous categories, number used
	Relatives	Corporate connection <sup>1</sup>	Nonprofit organization					
			A unit of government	Other				
				Religious or charitable	Other			
United States, total.....	42	39	41	38	33	42	42	
Alabama.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Alaska.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Arizona.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Arkansas.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
California.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	-
Colorado.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Connecticut.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
Florida.....	Yes	Yes	Yes	Yes	-	Yes	Yes	2
Georgia.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Hawaii.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Idaho.....	Yes	-	Yes	Yes	-	Yes	Yes	-
Illinois.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Indiana.....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Iowa.....	Yes	Yes	Yes	Yes	-	Yes	Yes	-
Kansas.....	Yes	-	Yes	Yes	Yes	Yes	Yes	3
Kentucky.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Louisiana.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Maine.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Maryland.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Massachusetts.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Michigan.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Minnesota.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Missouri.....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Montana.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Nebraska.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Nevada.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
New Hampshire.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2
New Jersey.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	3
New Mexico.....	Yes	Yes	Yes	-	-	Yes	Yes	-
New York.....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
North Dakota.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Ohio.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Oklahoma.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Oregon.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Pennsylvania.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Rhode Island.....	Yes	Yes	Yes	-	-	Yes	Yes	-
South Carolina.....	Yes	Yes	-	-	-	Yes	Yes	-
South Dakota.....	Yes	Yes	Yes	Yes	-	Yes	Yes	-
Tennessee.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Texas.....	Yes	-	Yes	Yes	Yes	Yes	Yes	-
Utah.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Vermont.....	Yes	Yes	Yes	Yes	-	Yes	Yes	-
Virginia.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Washington.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	18
West Virginia.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1
Wisconsin.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-

Note: In some instances, responses to 1979 questionnaires exhibit substantial variation from corresponding responses for State and Local Ratio Studies and Property Assessment, Special Studies No. 72, August 1975.

- Indicates transactions are not necessarily excluded from ratio studies.

<sup>1</sup>Transfers between corporate affiliates, or between a corporation and its subsidiary, a corporation and its stockholders, or two corporations having the same ownership.

<sup>2</sup>Transfers to correct defects in title, create joint tenancy, reorganize or reconvey property.

<sup>3</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13. When studies were performed prior to Proposition 13 California used only appraisals, no sales.

<sup>4</sup>State uses only appraisals in conducting ratio studies.



Table 8. Statistical Measures Derived for State Ratio Studies

State	Arith- metic mean	Median ratio	Ratio of aggregate amounts	Coefficient of intra-area dispersion, from ratio indicated	Coefficient of interarea dispersion	Frequency distribution	Index of regressive assessment (price related differential)	Standard deviation	Other
United States, total.....	36	33	36	From mean - 12 From median - 16 From both - 1	8	21	20	23	11
Alabama.....	Yes	Yes	Yes	-	-	-	-	-	-
Alaska.....	-	-	Yes	-	Yes	-	-	-	-
Arizona.....	Yes	Yes	Yes	Median	-	-	-	Yes	-
Arkansas.....	<sup>1</sup> Yes	-	<sup>1</sup> Yes	-	-	-	-	-	-
California <sup>2</sup> .....	Yes	Yes	Yes	Median	Yes	Yes	-	Yes	-
Colorado.....	-	-	Yes	-	-	Yes	-	Yes	-
Connecticut.....	Yes	Yes	Yes	Mean	-	-	Yes	Yes	Coefficient of variance
Florida.....	Yes	Yes	Yes	Mean	-	Yes	Yes	Yes	( <sup>3</sup> )
Georgia.....	Yes	Yes	Yes	-	-	-	-	-	-
Hawaii.....	Yes	-	-	Mean	-	Yes	Yes	Yes	-
Idaho.....	-	Yes	Yes	-	-	Yes	Yes	Yes	( <sup>4</sup> )
Illinois.....	Yes	Yes	Yes	Median	-	Yes	Yes	Yes	( <sup>5</sup> )
Indiana.....	-	-	Yes	-	-	-	-	-	-
Iowa.....	Yes	Yes	Yes	Median	-	-	Yes	-	-
Kansas.....	Yes	Yes	Yes	Median	-	Yes	-	Yes	-
Kentucky.....	Yes	Yes	-	Median	-	Yes	Yes	-	Coefficient of variation
Louisiana.....	-	Yes	-	-	-	-	-	-	-
Maine.....	Yes	Yes	Yes	Median	-	-	-	Yes	-
Maryland.....	Yes	-	Yes	Mean	-	-	Yes	Yes	-
Massachusetts.....	Yes	-	Yes	-	-	Yes	-	-	Coefficient of variation
Michigan.....	Yes	Yes	-	-	-	-	-	Yes	-
Minnesota.....	Yes	Yes	Yes	Median	-	Yes	Yes	Yes	-
Missouri.....	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes	( <sup>6</sup> )
Montana.....	Yes	-	Yes	Mean	Yes	-	Yes	Yes	( <sup>7</sup> )
Nebraska.....	Yes	Yes	Yes	Median	Yes	Yes	Yes	Yes	-
Nevada.....	Yes	Yes	-	( <sup>8</sup> )	-	-	-	Yes	( <sup>9</sup> )
New Hampshire.....	Yes	Yes	Yes	Median	-	-	-	-	-
New Jersey.....	Yes	-	Yes	Mean	-	-	Yes	-	-
New Mexico.....	-	Yes	-	Median	-	-	-	Yes	-
New York.....	-	-	<sup>1</sup> Yes	-	-	-	-	-	Coefficient of variation
North Dakota.....	Yes	Yes	Yes	Mean	-	Yes	Yes	Yes	-
Ohio.....	Yes	-	Yes	Mean	-	Yes	-	Yes	Coefficient of variation
Oklahoma.....	Yes	Yes	Yes	Median	-	-	Yes	-	-
Oregon.....	Yes	Yes	Yes	Mean	-	Yes	-	-	-
Pennsylvania.....	Yes	Yes	-	-	-	-	-	-	-
Rhode Island.....	-	Yes	Yes	Median	-	-	Yes	-	-
South Carolina.....	Yes	Yes	-	Median	-	Yes	-	-	-
South Dakota.....	-	Yes	-	-	-	-	-	-	-
Tennessee.....	Yes	Yes	Yes	Mean	-	Yes	Yes	Yes	-
Texas.....	-	-	Yes	-	-	-	-	-	-
Utah.....	Yes	Yes	Yes	Mean	Yes	Yes	-	Yes	-
Vermont.....	Yes	Yes	Yes	-	-	Yes	Yes	-	-
Virginia.....	Yes	Yes	Yes	Median	-	-	Yes	-	-
Washington.....	Yes	Yes	Yes	Mean	Yes	Yes	-	Yes	-
West Virginia.....	Yes	-	-	-	-	-	-	-	-
Wisconsin.....	Yes	Yes	Yes	Median	Yes	Yes	Yes	-	-

- Indicates no measure of the type specified is derived.

<sup>1</sup>Data for Arkansas presented as shown in State and Local Ratio Studies and Property Assessment, Special Studies No. 72, 1975. Data for New York as to "ratio of aggregate amounts," also presented as shown in same publication. <sup>2</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13. Responses presented refer to California practice when ratio studies were last performed. <sup>3</sup>Additional measures derived are coefficient of correlation, relative and Pearson skewness coefficients, simple and weighted standard errors, coefficient of variation. Histograms are also used. <sup>4</sup>Additional measures derived are inter-quartile dispersion, geometric mean, standard error of mean. <sup>5</sup>Additional measures derived are quartiles one and three, deciles one and nine. <sup>6</sup>Additional measures derived are average deviation, coefficient of variation, range, and standard error of mean. <sup>7</sup>Additional measures derived are coefficient of variation, Pearson skewness coefficient, and coefficient of kurtosis. <sup>8</sup>State derives coefficients of intra-area dispersion from both the median and mean. <sup>9</sup>Additional measures derived are coefficient of variation, Pearson coefficient of skewness, and standard error.



Table 9. Use of Ratio Findings Contained in State Ratio Studies

State	Manner of use	Purpose of use					Accomplishment of reappraisal programs		Possibility for use in taxpayer appeals
		Equalization of assessed values		Apportionment of State aid		Other	Selecting reappraisal targets by classification cited	Evaluating reappraisal effectiveness	
		Among counties, with values initially determined by officials at level specified	Within counties	For schools <sup>1</sup>	For purposes specified				
Alabama.....	A, I-E	Local	Yes	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Alaska.....	A	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Arizona.....	I-E	Local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Arkansas.....	A, I-E	Local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
California <sup>3</sup> .....	A, I-E	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Certain social programs	( <sup>2</sup> )	Yes	Yes
Colorado.....	A, I-E, I-S	Local	( <sup>2</sup> )	( <sup>4</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	( <sup>2</sup> )	Yes
Connecticut.....	A	Local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Florida.....	A, I-E, I-S	( <sup>2</sup> )	( <sup>2</sup> )	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	Specifically litigation
Georgia.....	A, I-S	State and local	Yes	Yes	Health grants	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Hawaii <sup>5</sup> .....	I-S	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Idaho.....	A	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Illinois.....	A, I-S	Local	( <sup>2</sup> )	Yes	Grants in aid	Provide a comparable base for rate and debt limitations	Area, use category	Yes	Yes
Indiana.....	A, I-E	Local	Yes	No	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Iowa.....	A, I-E, I-S	Local	Yes	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Kansas.....	A	Local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	Yes	Yes
Kentucky.....	A, I-E, I-S	Local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Louisiana.....	A, I-E	Local	Yes	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Maine.....	A, I-E, I-S	Local (towns)	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Maryland.....	A	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Police aid	( <sup>2</sup> )	Area	Yes	( <sup>2</sup> )
Massachusetts.....	A, I-E	Local (towns)	( <sup>2</sup> )	Yes	Highway and general municipal aid	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Michigan.....	A, I-S	State and local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	Yes	Yes
Minnesota.....	A, I-E, I-S	Local	( <sup>2</sup> )	Yes	Local government aid	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Missouri.....	A	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	( <sup>2</sup> )
Montana.....	A, I-E, I-S	Local <sup>6</sup>	Yes	<sup>1</sup> No	( <sup>2</sup> )	Continuous adjustment of computer programs	Area, use category	Yes	Yes
Nebraska.....	A, I-E	Local	( <sup>2</sup> )	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	( <sup>2</sup> )
Nevada.....	A, I-E	State and local	( <sup>2</sup> )	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Use category	( <sup>2</sup> )	( <sup>2</sup> )
New Hampshire.....	A, I-S	Local (towns)	Yes	Yes	Forest land and flood control aid	( <sup>2</sup> )	Area, use category	( <sup>2</sup> )	Yes
New Jersey.....	A	Local	Yes	Yes	( <sup>2</sup> )	Basis for calculations of county revenue components	Area, use category	Yes	Yes
New Mexico.....	A, I-S	Local	Yes	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	( <sup>2</sup> )
New York.....	A, I-E, I-S	State and local	( <sup>2</sup> )	Yes	Revenue sharing	Determination for tax and debt limits	Use category	Yes	Yes
North Dakota.....	A, I-E	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	Yes	( <sup>2</sup> )
Ohio.....	A, I-E, I-S	State and local	Yes	<sup>1</sup> Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	Yes
Oklahoma.....	A, I-E, I-S	Local	Yes	Yes	( <sup>2</sup> )	Determine salary levels of county officials	Area, use category	Yes	Yes
Oregon.....	A, I-E, I-S	State and local	Yes	Yes	( <sup>2</sup> )	Determining taxing and bonding power of government units. To correct value allocations between land and building components. Identifying market trends.	Area, use category	Yes	Yes
Pennsylvania.....	A	Local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	No
Rhode Island.....	A, I-E, I-S	Local (towns)	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	( <sup>2</sup> )	( <sup>2</sup> )
South Carolina.....	A	State and local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	Yes	( <sup>2</sup> )
South Dakota.....	A, I-E	State and local	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	Yes
Tennessee.....	A, I-S	Local	( <sup>2</sup> )	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Use category	Yes	Yes
Texas.....	A	Local <sup>7</sup>	No	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Utah.....	A, I-E	Local	Yes	<sup>1</sup> No	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	( <sup>2</sup> )
Vermont.....	A	Local (towns)	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	Unofficially
Virginia.....	A	Local (counties and independent cities)	( <sup>2</sup> )	Yes	( <sup>2</sup> )	In connection with the assessment of public service property	Area	( <sup>2</sup> )	No
Washington.....	A	State and local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	State levy of utility values	Area	Yes	( <sup>2</sup> )
West Virginia.....	A	State and local	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area	( <sup>2</sup> )	( <sup>2</sup> )
Wisconsin.....	A, I-E, I-S	State and local	Yes	<sup>1</sup> Yes	( <sup>2</sup> )	( <sup>2</sup> )	Area, use category	Yes	No

Explanation of codes used in copy is as follows:

A - Ratio findings used to adjust jurisdiction aggregates to a common level, to produce an equalized value base for apportioning State or other aid, or for similar interjurisdictional equalization purpose.

I-E - Ratio findings used to change individual assessed values whenever necessary, to attain a common level within the entire local assessing jurisdiction affected.

I-S - Ratio findings used to change individual assessed values whenever necessary, to attain a common level for a specified intrajurisdictional subgroup, e.g., use category or neighborhood.

"Area" may include entire jurisdiction or a portion thereof. "Use category" refers to purpose for which property is used, or in particular instances, can be used. Examples include single-family residential, commercial, industrial, and agricultural.

<sup>1</sup>Available data from this survey have been compared with data from School Finances at a Fifth Glance, Education Commission of the States, Denver, Colorado, June 1980.

<sup>2</sup>Relevance, if any, not indicated by data obtained.

<sup>3</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13. Data presented herein pertain to last ratio study completed.

<sup>4</sup>Formerly used in school aid apportionment formula.

<sup>5</sup>The assessing function, formerly performed by the State, becomes a county function July 1, 1981.

<sup>6</sup>The local elected assessors, nevertheless, are State employees.

<sup>7</sup>Among independent school districts.

Table 10. Scope of Ratio Studies Conducted by Selected Local Jurisdictions

Jurisdiction	Usual frequency of study	Sales or other market value indicators occurred during period shown	Availability of results for public use	Jurisdiction	Usual frequency of study	Sales or other market value indicators occurred during period shown	Availability of results for public use
Alabama: Jefferson County..... Montgomery County.....	Annually Annually	1 year 1 year	Not obtainable Obtainable	Nebraska: Douglas County.....	Annually	20 months	Obtainable
Arizona: Maricopa County.....	Annually	1 year	Not obtainable	New York: New York City.....	Annually	6 months	Obtainable
California <sup>1</sup> .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	North Carolina: Mecklenburg County....	Annually	1 year	Obtainable
Connecticut: Hartford city.....	Prior to and during a city wide revaluation	4 years	Obtainable	Ohio: Franklin County..... Lucas County..... Mahoning County.....	Triennially Triennially Triennially	3 years 2 years 1 year	Obtainable Obtainable Inserted on tax bill
Delaware: Kent County..... Dover city.....	When requested Annually	8 months 1 year	Obtainable Obtainable	Stark County.....	Triennially	3 years	Inserted on tax bill
District of Columbia: Washington city.....	Annually	1 year	Obtainable	Oregon: Lane County..... Multnomah County.....	Annually Annually	1 year 1 year	Obtainable Obtainable
Florida: Dade County..... Jacksonville-Duval County.....	Annually Annually	1 year 1 year	Not obtainable Obtainable	Pennsylvania: Allegheny County.....	Annually	1-1/2 years	Inserted on tax bill
Georgia: Chatham County..... Fulton County.....	Annually Annually	1 year 2 years	Obtainable Obtainable	Delaware County..... Montgomery County.....	( <sup>3</sup> ) Annually	1 year 1 year	Not obtainable Not obtainable
Illinois: Winnebago County..... Bloomington city.....	Annually Annually	1 year 1 year	Obtainable Obtainable	South Dakota: Minnehaha County.....	Annually	3 years	Obtainable
Iowa: Ft. Madison city.....	Annually	1 year	Obtainable	Texas: Jefferson County..... Ft. Worth city..... Wichita Falls city....	Annually Annually Triennially; one-third of city each year	4 years 6 months 2 years	Obtainable Not obtainable Obtainable
Kansas: Sedgwick County.....	Continuing basis	6 months	Not obtainable	Virginia: Arlington County..... Fairfax County..... Hampton city..... Norfolk city..... Portsmouth city.....	As required Annually Annually Annually Semiannually	3 years 1 year 1 year 1 year 1 year	Obtainable Obtainable Obtainable Obtainable Obtainable
Michigan: Detroit city..... Flint city..... Grand Rapids city.....	Annually/quarterly Annually Annually	18 months 2-1/2 years 1 year	Obtainable Obtainable Obtainable	Washington: King County..... Pierce County..... Spokane County..... Yakima County.....	Annually ( <sup>4</sup> ) Annually Annually	8 months ( <sup>4</sup> ) 1 year 8 months	Obtainable Obtainable Obtainable Obtainable
Minnesota: Hennepin County..... Ramsey County..... St. Louis County..... Minneapolis city.....	Semiannually Annually Annually Semiannually <sup>2</sup>	1 year 2 years 2 years 1 year	Not obtainable Not obtainable Obtainable Not Obtainable	Wisconsin: Madison city..... Milwaukee city.....	Annually Annually	1 year 1 year <sup>5</sup>	Obtainable Obtainable
Missouri: Jackson County..... Kansas City.....	Annually Annually	1 year 1 year	Obtainable Obtainable				

<sup>1</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.<sup>2</sup>Or on request.<sup>3</sup>As necessary for court cases.<sup>4</sup>As recorded throughout the year; period covered is usually less than four years, but length depends on the study.<sup>5</sup>First six months of sales period may be separately examined for preliminary findings.

Table 11. Intra-Area Classifications for Which Selected Local Jurisdictions Derive Ratios, by Jurisdiction

Jurisdiction	Location				Governmental units		Other
	Urban		Suburban	Rural	Municipalities or townships	School districts	
	Entire urban area	Neighborhoods or assessing districts					
Alabama:							
Jefferson County.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Appraisal manual types; structure age; value ranges
Montgomery County.....	Yes	Yes	Yes	Yes	Yes	Yes	
Arizona:							
Maricopa County.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	General county level only
California.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	
Connecticut:							
Hartford city.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Structure age; value ranges
Delaware:							
Dover city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	
District of Columbia:							
Washington city.....	Yes	Yes	( <sup>2</sup> )	No	No	No	
Florida:							
Dade County.....	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	Land use codes
Jacksonville-Duval County....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )	Yes	( <sup>1</sup> )	Appraisal manual types
Georgia:							
Chatham County.....	Yes	Yes	Yes	Yes	Yes	Yes	Appraisal manual types; structure age; value ranges; grade of construction and time of sale
Fulton County.....	Yes	( <sup>2</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	
Illinois:							
Bloomington city.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Entire jurisdiction only
Iowa:							
Fort Madison city.....	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Structure age
Kansas:							
Sedgwick County.....	Yes	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )	
Michigan:							
Detroit city.....	( <sup>1</sup> )	Yes	No	No	( <sup>2</sup> )	( <sup>1</sup> )	Appraisal manual types; structure age; value ranges; story height; exterior wall
Flint city.....	Yes	Yes	No	No	Yes	( <sup>1</sup> )	Appraisal manual types; structure age; value ranges; geographic locations
Grand Rapids city.....	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	Appraisal manual types; value ranges
Minnesota:							
Hennepin County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Property type
Ramsey County.....	Yes	Yes	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Appraisal manual types; structure age; value ranges; location; dwelling types
St. Louis County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Value ranges
Minneapolis city.....	Yes	Yes	No	No	( <sup>2</sup> )	( <sup>1</sup> )	Structure age; value ranges; geographical areas
Missouri:							
Jackson County.....	Yes	( <sup>1</sup> )	Yes	Yes	Yes	Yes	
Kansas City.....	( <sup>1</sup> )	Yes	No	No	( <sup>1</sup> )	( <sup>1</sup> )	
Nebraska:							
Douglas County.....	Yes	( <sup>1</sup> )	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Structure age; value ranges
New York:							
New York City.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Appraisal manual types; value ranges
North Carolina:							
Mecklenburg County.....	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	<sup>a</sup> Yes	( <sup>1</sup> )	Appraisal manual types; structure age; value ranges; areas
Ohio:							
Franklin County.....	Yes	Yes	Yes	Yes	Yes	Yes	Value ranges
Lucas County.....	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	
Mahoning County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	Appraisal manual types; structure age; value ranges
Stark County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	
Oregon:							
Lane County.....	Yes	Yes	Yes	Yes	Yes	Yes	Appraisal manual types; building classifications
Multnomah County.....	Yes	( <sup>1</sup> )	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Appraisal manual types; value ranges; property zone; year appraised; geographic area
Pennsylvania:							
Allegheny County.....	Yes	Yes	Yes	( <sup>1</sup> )	Yes	Yes	County level only
Delaware County.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	
Montgomery County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Value ranges
South Dakota:							
Minnehaha County.....	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	Yes	

See footnotes at end of table.

Table 11. Intra-Area Classifications for Which Selected Local Jurisdictions Derive Ratios, by Jurisdiction—Continued

Jurisdiction	Location				Governmental units		Other
	Urban		Suburban	Rural	Municipalities or townships	School districts	
	Entire urban area	Neighborhoods or assessing districts					
Texas:							
Jefferson County.....	( <sup>2</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	Appraisal manual types; structure age; value ranges
Fort Worth city.....	( <sup>2</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	Appraisal manual types; structure age
Wichita Falls city.....	Yes	Yes	Yes	Yes	Yes	Yes	
Virginia:							
Arlington County.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Appraisal manual types; structure age; value ranges
Fairfax County.....	Yes	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )	Land use; zoning; geographic areas
Hampton city.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )	Appraisal manual types
Norfolk city.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	No	Yes	( <sup>2</sup> )	
Portsmouth city.....	( <sup>1</sup> )	Yes	( <sup>2</sup> )	No	( <sup>2</sup> )	( <sup>2</sup> )	
Washington:							
King County.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Value ranges
Pierce County.....	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	Appraisal manual types; structure age; value ranges
Spokane County.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Countywide ratio only
Yakima County.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Value ranges
Wisconsin:							
Madison city.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Geographic areas
Milwaukee city.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Appraisal manual types; structure age

<sup>1</sup>Available data do not rule out possible applicability.<sup>2</sup>Available data indicate no applicability.<sup>3</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.<sup>4</sup>Charlotte only.<sup>5</sup>Ratios calculated for any named category, as deemed necessary.



Table 12. Property Use Categories for Which Selected Local Jurisdictions Derive Ratios, by Jurisdiction

Jurisdiction	Realty										Personalty
	All types as a single group	Residential			Commercial	Industrial	Agricultural	Vacant land	Other		
		All	Single- family	Multi- family							
Alabama: Jefferson County..... Montgomery County.....	( <sup>1</sup> ) Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	No Public utility, timber	No No	
Arizona: Maricopa County.....	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	No	No	
California.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	
Connecticut: Hartford city.....	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	( <sup>1</sup> )	( <sup>1</sup> )	
Delaware: Dover city.....	( <sup>1</sup> )	Yes	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	No	Yes	No	No	
District of Columbia: Washington city.....	( <sup>1</sup> )	Yes	Yes	Yes	Yes	Yes	No	Yes	( <sup>1</sup> )	( <sup>1</sup> )	
Florida: Dade County..... Jacksonville-Duval County.	( <sup>1</sup> ) Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	( <sup>1</sup> ) Yes	Yes Yes	( <sup>1</sup> ) Public utility, timber	( <sup>1</sup> ) Yes	
Georgia: Chatham County..... Fulton County.....	Yes Yes	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	Public utility, timber, mineral rights No	Yes No	
Illinois: Winnebago County.....	Yes	Yes	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	No	No	
Iowa: Fort Madison city.....	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	
Kansas: Sedgwick County.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	
Michigan: Detroit city..... Flint city..... Grand Rapids city.....	Yes ( <sup>1</sup> ) Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	No No Yes	( <sup>1</sup> ) ( <sup>1</sup> ) Yes	( <sup>1</sup> ) ( <sup>1</sup> ) ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> ) ( <sup>1</sup> )	
Minnesota: Hennepin County..... Ramsey County..... St. Louis County..... Minneapolis city.....	( <sup>1</sup> ) ( <sup>1</sup> ) Yes Yes	Yes Yes Yes Yes	( <sup>1</sup> ) Yes ( <sup>1</sup> ) Yes	( <sup>1</sup> ) Yes ( <sup>1</sup> ) Yes	Yes ( <sup>1</sup> ) Yes Yes	Yes ( <sup>1</sup> ) Yes Yes	Yes No Yes No	( <sup>1</sup> ) ( <sup>1</sup> ) Yes ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> ) Seasonal recreational ( <sup>1</sup> )	No No ( <sup>1</sup> ) ( <sup>1</sup> )	
Missouri: Jackson County..... Kansas City.....	Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> )	( <sup>1</sup> ) Yes	( <sup>1</sup> ) ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> )	Yes ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> )	
Nebraska: Douglas County.....	( <sup>1</sup> )	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	
New York: New York City.....	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Public utility	( <sup>1</sup> )	
North Carolina: Mecklenburg County.....	( <sup>1</sup> )	Yes	Yes	Yes	*Yes	*Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	
Ohio: Franklin County..... Lucas County..... Mahoning County..... Stark County.....	Yes ( <sup>1</sup> ) Yes ( <sup>1</sup> )	( <sup>1</sup> ) Yes Yes Yes	( <sup>1</sup> ) Yes Yes ( <sup>1</sup> )	( <sup>1</sup> ) Yes Yes ( <sup>1</sup> )	( <sup>1</sup> ) Yes Yes Yes	( <sup>1</sup> ) Yes Yes Yes	( <sup>1</sup> ) Yes Yes Yes	( <sup>1</sup> ) Yes Yes Yes	( <sup>1</sup> ) ( <sup>1</sup> ) Public utility ( <sup>1</sup> )	( <sup>1</sup> ) ( <sup>1</sup> ) ( <sup>1</sup> ) ( <sup>1</sup> )	
Oregon: Lane County..... Multnomah County.....	Yes Yes	Yes Yes	( <sup>1</sup> ) Yes	( <sup>1</sup> ) Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	( <sup>1</sup> ) Homestead	Yes Yes	
Pennsylvania: Allegheny County..... Delaware County..... Montgomery County.....	( <sup>1</sup> ) Yes ( <sup>1</sup> )	Yes ( <sup>1</sup> ) Yes	Yes ( <sup>1</sup> ) Yes	Yes ( <sup>1</sup> ) ( <sup>1</sup> )	Yes ( <sup>1</sup> ) Yes	Yes ( <sup>1</sup> ) Yes	Yes ( <sup>1</sup> ) ( <sup>1</sup> )	Yes ( <sup>1</sup> ) ( <sup>1</sup> )	Public utility, timber, mineral rights ( <sup>1</sup> ) ( <sup>1</sup> )	No No No	
South Dakota: Minnehaha County.....	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	No	
Texas: Jefferson County..... Fort Worth city..... Wichita Falls city.....	( <sup>1</sup> ) ( <sup>1</sup> ) Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	( <sup>1</sup> ) Yes Yes	Yes Yes Yes	( <sup>1</sup> ) Public utility, mineral rights Public utility, timber, mineral rights	( <sup>1</sup> ) ( <sup>1</sup> ) Yes	

See footnotes at end of table.

Table 12. Property Use Categories for Which Selected Local Jurisdictions Derive Ratios, by Jurisdiction—Continued

Jurisdiction	Realty									Personalty
	All types as a single group	Residential			Commercial	Industrial	Agricultural	Vacant land	Other	
		All	Single- family	Multi- family						
Virginia:										
Arlington County.....	( <sup>1</sup> )	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Fairfax County.....	( <sup>1</sup> )	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Hampton city.....	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Norfolk city.....	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Portsmouth city.....	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Washington:										
King County.....	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	Yes	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )
Pierce County.....	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	<sup>5</sup> Yes	( <sup>1</sup> )	( <sup>2</sup> )
Yakima County.....	Yes	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )
Wisconsin:										
Madison city.....	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>1</sup> )	( <sup>2</sup> )
Milwaukee city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Public utility, timber, mineral rights	Yes

<sup>1</sup>Available data do not rule out possible applicability.<sup>2</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.<sup>3</sup>Available data indicate that no ratio studies are conducted for this category.<sup>4</sup>In Mecklenburg County, these two categories are combined.<sup>5</sup>As deemed necessary.

Table 13. Major Characteristics of Ratio Studies Conducted by Selected Local Jurisdictions

Jurisdiction	Value indicators used	Use of sales data				
		Sales included (before screening)	Screening occurrence <sup>1</sup>			Price verified by means indicated <sup>1</sup>
			At time of enumeration	When price verified	During statistical treatment	
Alabama:						
Jefferson County.....	Sales	Sample		Yes		P, Tr(S)
Montgomery County.....	Sales, appraisals	Sample	Yes	Yes	Yes	T, Tr(S), multiple listing service
Arizona:						
Maricopa County.....	Sales, appraisals	Sample		Yes	Yes	Affidavits
California.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	
Connecticut:						
Hartford city.....	Sales, appraisals	All			Yes	P, T
Delaware:						
Kent County.....	Sales	All		Yes		Tr(S)
Dover city.....	Sales	Sample		Yes		( <sup>3</sup> )
District of Columbia:						
Washington city.....	Sales, appraisals	All		Yes		Recordation tax return <sup>4</sup>
Florida:						
Dade County.....	Sales	All		Yes	Yes	T, Tr(S)
Jacksonville-Duval County...	Sales	All			Yes	P, T, Tr(S)
Georgia:						
Chatham County.....	Sales	Sample			Yes	P, T, C
Fulton County.....	Sales	Sample		Yes		P, T, Tr(S)
Illinois:						
Winnebago County.....	Sales	All			Yes	Tr(S)
Bloomington city.....	Sales	Sample				Tr(S)
Iowa:						
Fort Madison city.....	Sales	Sample	Yes			Tr(S)
Kansas:						
Sedgwick County.....	Sales, appraisals	All		Yes	Yes	Certificate of value
Michigan:						
Detroit city.....	Sales	Sample			Yes	P, Tr(S)
Flint city.....	Sales	Sample			Yes	P, T, Tr(S)
Grand Rapids city.....	Sales	Sample	Yes	Yes	Yes	P, T, Tr(S), multiple listing service
Minnesota:						
Hennepin County.....	Sales	Sample			Yes	Tr(S)
Ramsey County.....	Sales	All	Yes	Yes	Yes	Tr(S)
St. Louis County.....	Sales	All	Yes			Tr(S)
Minneapolis city.....	Sales	All			Yes	T, Tr(S)
Missouri:						
Jackson County.....	Sales	All		Yes	Yes	P, T, broker and agents records
Kansas City.....	Sales	Sample		Yes		T
Nebraska:						
Douglas County.....	Sales	Sample	Yes		Yes	Appraiser on site
New York:						
New York City.....	Sales	Sample			Yes	Tr(L)
North Carolina:						
Mecklenburg County.....	Sales	All			Yes	P, agents and brokers
Ohio:						
Franklin County.....	Sales	All	Yes	Yes	Yes	Tr(L)
Lucas County.....	Sales	All	Yes	Yes	Yes	P, T, Tr(L)
Mahoning County.....	Sales	Sample	Yes	Yes	Yes	Tr(L)
Stark County.....	Sales	All	Yes	Yes	Yes	Tr(L)
Oregon:						
Lane County.....	Sales, appraisals	All	Yes	Yes		P, T, Q
Multnomah County.....	Sales, appraisals	All	Yes	Yes	Yes	T, Q, real estate multiple listing service
Pennsylvania:						
Allegheny County.....	Sales	Sample			Yes	P, T, Tr(L)
Delaware County.....	Sales	All			Yes	Tr(L)
Montgomery County.....	Sales	All			Yes	( <sup>3</sup> )
South Dakota:						
Minnehaha County.....	Sales, appraisals	All	Yes	Yes		P, T, Q
Texas:						
Jefferson County.....	Sales	All			Yes	P, T
Fort Worth city.....	Sales	All		Yes		( <sup>3</sup> )
Wichita Falls city.....	Sales	All	Yes	Yes	Yes	P, T, real estate multiple listing service; "Proves" system, see text

See footnotes at end of table.

Table 13. Major Characteristics of Ratio Studies Conducted by Selected Local Jurisdictions—Continued

Jurisdiction	Value indicators used	Use of sales data				
		Sales included (before screening)	Screening occurrence <sup>1</sup>			Price verified by means indicated <sup>1</sup>
			At time of enumeration	When price verified	During statistical treatment	
Virginia:						
Arlington County.....	Sales	Sample	Yes			Tr(L), Tr(S), inspecting deeds
Fairfax County.....	Sales	All		Yes		P, T, Tr(L), Tr(S)
Hampton city.....	Sales	All	Yes	Yes		P, T, Tr(L), Tr(S), including affidavits
Norfolk city.....	Sales	Sample		Yes		Tr(L), Tr(S)
Portsmouth city.....	Sales	All	Yes			Tr(L), Tr(S)
Washington:						
King County.....	Sales, appraisals	Sample	Yes	Yes	Yes	P, T, Q
Pierce County.....	Sales	Variable			Yes	( <sup>3</sup> )
Spokane County.....	Sales	Sample		Yes		P, T, Tr(L)
Yakima County.....	Sales	All			Yes	Tr(L)
Wisconsin:						
Madison city.....	Sales	All			Yes	Tr(S)
Milwaukee city.....	Sales	All	Yes	Yes	Yes	Tr(S), multiple listing service

Explanation of codes used in copy is as follows:

C - correspondence

P - personal interview

Q - questionnaire

T - telephone

Tr(L) - documentation, local transfer tax

Tr(S) - documentation, State transfer tax

<sup>1</sup>Responses presented do not necessarily rule out additional occurrences or methods used in individual situations.

<sup>2</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.

<sup>3</sup>Data on separate verification procedures, if any, not available.

<sup>4</sup>Required by the present 1 percent "deed recordation tax," paid by the buyer. An additional 1 percent "transfer tax," paid by the seller, was passed effective August 1, 1980.



**Table 14. Categories of Sales or Other Transfers Excluded From Ratio Studies Conducted by Selected Local Jurisdictions**

Jurisdiction	Specified status or relationship of, or between, grantor and/or grantee					Transfers of convenience	Foreclosure or other such legal action	Miscellaneous categories <sup>1</sup>
	Relatives	Corporate connection	Nonprofit organization					
			Unit of government	Religious or charitable	Other			
Alabama:								
Jefferson County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Montgomery County.....	Yes	Yes		( <sup>2</sup> )	Yes	Yes	Yes	Any sale determined to be other than "arms length."
Arizona:								
Maricopa County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
California <sup>4</sup> .....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	
Connecticut:								
Hartford city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Delaware:								
Kent County.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Dover city.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
District of Columbia:								
Washington city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Florida:								
Dade County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Jacksonville-Duval County..	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Multiple property sales
Georgia:								
Chatham County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Fulton County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Illinois:								
Winnebago County.....	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Yes	Yes	"Contract for deed"
Bloomington city.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	"Contract for deed" occurring in prior years.
Iowa:								
Fort Madison city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Kansas:								
Sedgwick County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Michigan:								
Detroit city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	"Investor purchases"
Flint city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Transfer subject to unknown mortgage or land contract balances; transfer of property physically changed after determination of assessed value but before sale.
Grand Rapids city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Transfers involving: Splits or combinations of property; auctions; probate action; partially exempt property; trades; "old" land contracts; partially completed structures.
Minnesota:								
Hennepin County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Ramsey County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
St. Louis County.....	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>3</sup> )
Minneapolis city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Old contracts
Missouri:								
Jackson County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Kansas City.....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Nebraska:								
Douglas County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
New York:								
New York City.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>3</sup> )
North Carolina:								
Mecklenburg County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Ohio:								
Franklin County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Lucas County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Mahoning County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Stark County.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Any transfer where no value is stated.
Oregon:								
Lane County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Multnomah County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Any transfer involving a use change since appraisal; any "old" sale
Pennsylvania:								
Allegheny County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Delaware County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Montgomery County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
South Dakota:								
Minnehaha County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>3</sup> )
Texas:								
Jefferson County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )
Wichita Falls city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>3</sup> )

See footnotes at end of table.

**Table 14. Categories of Sales or Other Transfers Excluded From Ratio Studies Conducted by Selected Local Jurisdictions—Continued**

Jurisdiction	Specified status or relationship of, or between, grantor and/or grantee					Transfers of convenience	Foreclosure or other such legal action	Miscellaneous categories <sup>1</sup>
	Relatives	Corporate connection	Nonprofit organization					
			Unit of government	Religious or charitable	Other			
Virginia:								
Arlington County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )
Fairfax County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Any transfer including items other than real estate; any partial interest sale.
Hampton city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>1</sup> )
Norfolk city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Any transfer involving inheritance.
Portsmouth city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>1</sup> )
Washington:								
King County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Transfers of cemetery lots; contracts entered into prior to enactment of tax.
Pierce County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Estate sales; partial interest sales; easements; transfers of forest land or other special use property; sales for less than \$1,000; any sale of a property changed since appraisal.
Spokane County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>1</sup> )
Yakima County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Specially assessed property
Wisconsin:								
Madison city.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Distress sales
Milwaukee city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Trades; partial interest sales.

<sup>1</sup>Types of transfers specified in this or other columns do not necessarily exhaust the varieties of transfers excluded from ratio studies in the jurisdictions specified.

<sup>2</sup>Particular treatment of transfers of this type in the jurisdiction specified not apparent from available data.

<sup>3</sup>No miscellaneous categories specified in available data.

<sup>4</sup>Ratio studies as such have been discontinued in California since the implementation of Proposition 13.

<sup>5</sup>Only residential sales are used.

<sup>6</sup>"Any" sales may be discarded as a result of verification procedures.

Table 15. Statistical Measures Derived From Ratio Studies by Local Jurisdictions

Jurisdiction	Mean ratio	Median ratio	Ratio of aggregate amounts	Coefficient of intra-area dispersion, from ratio indicated	Coefficient of interarea dispersion	Frequency distribution	Index of regressive assessment (price related differential)	Standard deviation	Other
Alabama:									
Jefferson County.....	Yes	-	Yes	-	-	-	-	Yes	
Montgomery County.....	Yes	-	-	-	-	-	Yes	Yes	
Arizona:									
Maricopa County.....	Yes	Yes	-	-	Yes	Yes	-	Yes	
California:.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	
Connecticut:									
Hartford city.....	Yes	-	Yes	-	<sup>2</sup> Yes	-	-	<sup>2</sup> Yes	
Delaware:									
Kent County.....	Yes	-	-	-	-	-	-	-	
Dover city.....	Yes	-	-	-	-	-	-	-	
District of Columbia:									
Washington city.....	Yes	Yes	Yes	Median	-	-	Yes	Yes	
Florida:									
Dade County.....	Yes	Yes	Yes	-	-	Yes	-	Yes	
Jacksonville-Duval County..	Yes	Yes	Yes	Mean	-	Yes	-	Yes	
Georgia:									
Chatham County.....	Yes	Yes	Yes	Median	Yes	-	-	Yes	
Fulton County.....	Yes	Yes	Yes	Median and mean	-	Yes	Yes	Yes	
Illinois:									
Waukegan County.....	Yes	Yes	Yes	Median	Yes	-	-	Yes	
Bloomington city.....	Yes	Yes	Yes	Median	Yes	-	-	-	
Iowa:									
Fort Madison city.....	Yes	Yes	Yes	Median	-	-	Yes	Yes	
Kansas:									
Sedgewick County.....	-	Yes	-	-	-	-	-	-	Coefficient of deviation
Michigan:									
Detroit city.....	Yes	Yes	Yes	Median	-	Yes	-	Yes	Confidence limits
Flint city.....	Yes	-	Yes	Mean	Yes	-	-	-	
Grand Rapids city.....	Yes	-	Yes	Mean	Yes	-	-	-	
Minnesota:									
Hennepin County.....	Yes	Yes	Yes	Median	-	-	Yes	Yes	
Ramsey County.....	Yes	-	-	-	-	Yes	-	Yes	
St. Louis County.....	-	-	Yes	-	-	-	-	-	
Minneapolis city.....	Yes	Yes	Yes	-	-	Yes	-	Yes	
Missouri:									
Jackson County.....	Yes	Yes	Yes	-	-	-	-	-	
Kansas City.....	-	-	Yes	-	-	-	-	-	
Nebraska:									
Douglas County.....	-	Yes	Yes	-	-	-	-	-	
New York:									
New York City.....	Yes	-	Yes	-	-	-	-	-	
North Carolina:									
Mecklenburg County.....	Yes	Yes	Yes	Median	Yes	Yes	-	Yes	
Ohio:									
Franklin County.....	-	Yes	-	-	-	-	-	-	
Lucas County.....	Yes	-	Yes	Mean	Yes	-	-	Yes	Average deviation
Mahoning County.....	Yes	Yes	-	-	-	-	Yes	-	
Stark County.....	Yes	-	-	Mean	-	-	-	-	Slope of trend line
Oregon:									
Lane County.....	Yes	Yes	-	-	-	Yes	-	Yes	
Multnomah County.....	Yes	Yes	Yes	Median and mean	-	Yes	-	-	
Pennsylvania:									
Allegheny County.....	Yes	Yes	Yes	Median	Yes	Yes	Yes	Yes	"Z" value
Delaware County.....	-	-	-	-	-	-	-	Yes	
Montgomery County.....	Yes	-	-	-	-	Yes	-	Yes	
South Dakota:									
Minnehaha County.....	Yes	Yes	Yes	-	Yes	-	-	-	
Texas:									
Jefferson County.....	Yes	Yes	Yes	-	-	-	-	-	
Fort Worth city.....	Yes	-	-	-	-	-	-	-	
Wichita Falls city.....	-	-	Yes	-	-	-	-	-	

See footnotes at end of table.

Table 15. Statistical Measures Derived From Ratio Studies by Local Jurisdictions—Continued

Jurisdiction	Mean ratio	Median ratio	Ratio of aggregate amounts	Coefficient of intra-area dispersion, from ratio indicated	Coefficient of interarea dispersion	Frequency distribution	Index of regressive assessment (price related differential)	Standard deviation	Other
Virginia:									
Arlington County.....	-	Yes	-	Median	Yes	-	Yes	-	
Fairfax County.....	Yes	Yes	Yes	Median and mean	Yes	-	-	-	
Hampton city.....	-	-	-	-	Yes	-	-	Yes	
Norfolk city.....	-	Yes	-	Median	-	-	-	-	
Portsmouth city.....	Yes	Yes	-	-	-	-	-	-	
Washington:									
King County.....	Yes	-	Yes	-	Yes	Yes	-	Yes	
Pierce County.....	Yes	Yes	Yes	Median and mean	Yes	-	-	Yes	
Spokane County.....	Yes	Yes	-	Median	-	Yes	-	Yes	
Yakima County.....	Yes	-	-	Mean	Yes	-	-	-	
Wisconsin:									
Madison city.....	Yes	Yes	Yes	-	-	Yes	-	Yes	
Milwaukee city.....	-	-	Yes	-	-	-	-	-	

- Available data indicate that this statistical measure is not derived.

<sup>1</sup>Ratio studies as such have been discontinued in California since the implementation of Proposition 13.

<sup>2</sup>Derivation of this statistical measure is a very recent development.



Table 16. Purposes and Implementation of Ratio Studies Conducted by Selected Local Jurisdictions

Jurisdiction	Purpose					Implementation			
	Equalization of assessed values within county, city, or other unit	Accomplishment of reappraisal program objectives			Possibility for use in taxpayer appeals <sup>1</sup>	Use of findings likely to condition changes for individual assessed values in--			
		Selection of targets		Evaluation of reappraisal effectiveness		An entire jurisdiction	Individual use categories	Individual neighborhoods	Other intra-jurisdictional groupings
		By area	By use category						
Alabama:									
Jefferson County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Montgomery County.....	Yes	( <sup>2</sup> )		( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Arizona:									
Maricopa County.....	Yes	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )
California.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Connecticut:									
Hartford city.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Delaware:									
Kent County.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Dover city.....	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
District of Columbia:									
Washington city.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )
Florida:									
Dade County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )
Jacksonville-Duval County..	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
Georgia:									
Chatham County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
Fulton County.....	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Illinois:									
Winnebago County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Bloomington city.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Iowa:									
Fort Madison city.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Michigan:									
Detroit city.....	( <sup>2</sup> )	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
Flint city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
Grand Rapids city.....	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )
Minnesota:									
Hennepin County.....	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Ramsey County.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
St. Louis County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Minneapolis city.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Missouri:									
Jackson County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )
Nebraska:									
Douglas County.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )
New York:									
New York City.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )
North Carolina:									
Mecklenburg County.....	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Ohio:									
Franklin County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Lucas County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )
Mahoning County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Stark County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )
Oregon:									
Lane County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Multnomah County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )
Pennsylvania:									
Allegheny County.....	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Delaware County.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Montgomery County.....	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )
South Dakota:									
Minnehaha County.....	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Texas:									
Jefferson County.....	Yes	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Fort Worth city.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Wichita Falls city.....	( <sup>2</sup> )	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )

See footnotes at end of table.

Table 16. Purposes and Implementation of Ratio Studies Conducted by Selected Local Jurisdictions—Continued

Jurisdiction	Purpose					Implementation			
	Equalization of assessed values within county, city, or other unit	Accomplishment of reappraisal program objectives			Possibility for use in taxpayer appeals <sup>1</sup>	Use of findings likely to condition changes for individual assessed values in--			
		Selection of targets		Evaluation of reappraisal effectiveness		An entire jurisdiction	Individual use categories	Individual neighborhoods	Other intra-jurisdictional groupings
		By area	By use category						
Virginia:									
Arlington County.....	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )
Fairfax County.....	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )
Hampton city.....	Yes	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	Yes	( <sup>2</sup> )
Norfolk city.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )	Yes	( <sup>2</sup> )
Portsmouth city.....	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	Yes	( <sup>2</sup> )
Washington:									
King County.....	Yes	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )
Pierce County.....	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )
Spokane County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Yakima County.....	Yes	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Wisconsin:									
Madison city.....	( <sup>2</sup> )	Yes	Yes	Yes	Yes	( <sup>2</sup> )	Yes	Yes	( <sup>2</sup> )
Milwaukee city.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	( <sup>2</sup> )

<sup>1</sup>Does not necessarily imply acceptance by the courts.<sup>2</sup>Applicability, if any, not confirmed by available data.<sup>3</sup>Ratio studies as such have been discontinued since the implementation of Proposition 13.<sup>4</sup>Findings used for analysis only.

Table 17. State Transfer Taxes and Recordation Requirements

State	Basis of tax or recordation requirement		Rate	Evidence of payment as shown (stamps, seal, etc.)	Penalty for false statement of value, etc. (fine and/or incarceration as shown)	Sales price display		
	Total sales price	Net sales price exclusive of mortgage or other liens				Type of documentation required, if any	Application	
							All transfers	All, with specified exemptions
Alabama.....		<sup>1</sup> Yes	50 cents per \$500	Stamps	None specified	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Arizona.....	No	No	\$2.00 per document	Certification on document	Misdemeanor	Affidavit		Yes
Arkansas.....	Yes		\$1.10 per \$1,000 <sup>3</sup>	Stamps	\$50 to \$100	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Colorado.....	Yes		1 cent per \$100 <sup>4</sup>	Imprinting on document	\$50 to \$500, not less than 10 days nor more than 3 months	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Connecticut.....	Yes		55 cent per \$500 <sup>3</sup>	Not specified	\$200 to \$500	Affidavit		Yes
Delaware.....	Yes		2 percent <sup>3 5</sup>	Stamps	Not more than \$500, not more than 1 year	Affidavit		Yes
Florida.....	Yes		40 cents per \$100	Stamps	Misdemeanor	Affidavit		Yes
Georgia.....		Yes	\$1.00 per \$1,000 or less, 10 cents per \$100 over \$1,000 <sup>3</sup>	Not specified	Misdemeanor	Written disclosure		Yes
Hawaii.....	Yes		5 cents per \$100 <sup>3 6</sup>	Seal imprint	\$500 to \$1,000 or 1 year	Certificate of conveyance		Yes
Illinois.....	Yes	Assumed mortgage, if any, not in basis	50 cents per \$500 <sup>3</sup>	Stamps	Misdemeanor	Real estate transfer declaration		Yes
Indiana.....		Yes	( <sup>7</sup> )	Stamps	Misdemeanor	Affidavit		Yes
Iowa.....	Yes		55 cents per \$500 <sup>8</sup>	Stamps	\$100 to \$500	Affidavit		Yes
Kansas.....	( <sup>9</sup> )	( <sup>9</sup> )	( <sup>9</sup> )	( <sup>9</sup> )	Misdemeanor	Certificate of value	( <sup>9</sup> )	( <sup>9</sup> )
Kentucky.....	Yes		50 cents per \$500	Recorded on deed	Not more than \$100, not more than 30 days	Affidavit		Yes
Maine.....	Yes		55 cents per \$500	Stamps	Not to exceed \$5,000, not more than 6 months	Declaration of value		Yes
Maryland.....	Yes		55 cents per \$500 plus 1/2 of 1 percent	Stamps	Not more than \$500, not more than 6 months	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Massachusetts.....		Yes	\$1.14 per \$500 <sup>3</sup>	Stamps	\$500 to \$1,000, not more than 1 year	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Michigan.....	Yes		55 cents per \$500 <sup>3</sup>	Stamps	Misdemeanor	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Minnesota.....		<sup>10</sup> Yes	\$2.20 first \$1,000, \$1.10 per \$500 over \$1,000	Stamps	Misdemeanor	Certificate of real estate value		Yes
Nebraska.....	Yes		55 cents per \$500	Stamps	Misdemeanor	Real estate transfer statement	( <sup>2</sup> )	( <sup>2</sup> )
Nevada.....		Yes	55 cents per \$500 <sup>3</sup>	Imprinting on deed	Misdemeanor	Declaration of value		Yes
New Hampshire.....	Yes		25 cents per \$100 <sup>11</sup>	Stamps	Misdemeanor	None specified	( <sup>2</sup> )	( <sup>2</sup> )
New Jersey.....	Yes		\$1.75 per \$500 <sup>3 12</sup>	Imprinting on document	Adjudged a disorderly person	Affidavit of consideration	Yes	
New York.....		<sup>13</sup> Yes	55 cents per \$500 <sup>3</sup>	Stamps	Misdemeanor	None specified	( <sup>2</sup> )	( <sup>2</sup> )
North Carolina.....		Yes	50 cents per \$500	Stamps	Misdemeanor	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Ohio.....	Yes		\$1.00 or 10 cents per 100 whichever is larger	Not specified	\$100 to \$1,000, not more than 6 months	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Oklahoma.....		<sup>14</sup> Yes	75 cents per \$500 <sup>3</sup>	Stamps	None specified	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Pennsylvania.....	Yes		One percent	Stamps	Misdemeanor	Affidavit of value		Yes
Rhode Island.....	Yes		\$1.10 per \$500 <sup>3</sup>	Stamps	None specified	( <sup>15</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
South Carolina.....		<sup>16</sup> Yes	\$1.00 per \$500	Stamps	\$20 to \$100	Affidavit		Yes
South Dakota.....	Yes		50 cents per \$500	Imprinting on document	Misdemeanor	None specified	( <sup>2</sup> )	( <sup>2</sup> )

See footnotes at end of table.

Table 17. State Transfer Taxes and Recordation Requirements—Continued

State	Basis of tax or recordation requirement		Rate	Evidence of payment as shown (stamps, seal, etc.)	Penalty for false statement of value, etc. (fine and/or incarceration as shown)	Sales price display		
	Total sales price	Net sales price exclusive of mortgage or other liens				Type of documentation required if any	All transfers	All, with specified exemptions
Tennessee.....		<sup>17</sup> Yes	\$2.50 per \$1,000	Not specified	Penalty for perjury	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Vermont.....	Yes		1/2 of 1 percent or \$1.00 whichever is greater <sup>18</sup>	Not specified	10 to 25 percent of amount due, but not more than \$1,000	Property transfer return	Yes	
Virginia.....	<sup>18</sup> Yes		50 cents per \$500 <sup>3 20</sup>	Not specified	None specified	None specified	( <sup>2</sup> )	( <sup>2</sup> )
Washington.....		Yes	50 cents per \$500 <sup>3</sup>	Stamps	Misdemeanor	None specified		
West Virginia.....	Yes		\$1.10 per \$500 <sup>3</sup>	Stamps	Misdemeanor	Declaration of consideration or value		Yes
Wisconsin.....	Yes		10 cents per \$100 <sup>3</sup>	Amount paid on deed	Not more than \$1,000 or one year	Real estate transfer return		Yes

<sup>1</sup>Alabama also levies a mortgage tax of 15 cents per \$100.<sup>2</sup>Relevance, if any, not indicated by data obtained.<sup>3</sup>Transfers under \$100 are exempt.<sup>4</sup>Transfers under \$500 are exempt.<sup>5</sup>This tax also applies to leases of more than 5 years.<sup>6</sup>Minimum tax \$1.<sup>7</sup>Gross income tax on proceeds from sale of real estate. Rate was 1.45 percent in 1979 and 1.40 percent in 1980 but declines annually until phased out in 2007.<sup>8</sup>First \$500 of sales price exempt.<sup>9</sup>Kansas has no transfer tax. Entries for that State refer to the mortgage recording fee.<sup>10</sup>Minnesota also levies a tax on mortgages of 15 cents per \$100.<sup>11</sup>Minimum tax is \$10 where consideration is \$4,000 or less.<sup>12</sup>Instruments creating leasehold interests for more than 99 years are taxed as deeds. Also, if property is newly constructed or previously occupied by blind, disabled or senior citizens tax is reduced to 50 cents per \$500.<sup>13</sup>New York also levies a mortgage tax of 50 cents per \$100.<sup>14</sup>Oklahoma also levies a mortgage recording tax of 10 cents per \$100.<sup>15</sup>If no consideration is shown, then a statement must be attached.<sup>16</sup>South Carolina also levies a tax on liens of 4 cents per \$100.<sup>17</sup>Tennessee also levies a mortgage tax of 10 cents per \$100 on indebtedness that exceeds \$2,000.<sup>18</sup>Vermont also levies a capital gains tax on gains from specified sales or exchanges of land. Rate is based on a combination of holding period and percentage of gain.<sup>19</sup>Virginia also levies a mortgage tax of 15 cents per \$100.<sup>20</sup>Data indicated applies to the realty transfer tax. Virginia also levies a document recording tax of 15 cents per \$100 on which reduced rates apply for transactions in excess of \$10 million.



Table 18. Transfer Taxes and Recordation Requirements of Local Jurisdictions

Jurisdiction	Basis of tax	Rate	Transfer tax payment evidenced as specified	Sales price display				Penalties (for false statement, etc.), fines and/or incarceration as indicated
				Documentation required, if any	Application			
					All trans- fers	All excluding specified exceptions		
						Amount of sales price	Specified exempt categories	
California: Counties..... Cities.....	Net sales price <sup>1</sup> Net sales price <sup>1</sup>	55 cents per \$500 27.5 cents per \$500 <sup>2</sup>	Stamps Stamps	Separate tax return Separate tax return			Yes Yes	Misdemeanor Misdemeanor
Delaware: Wilmington.....	Sales price <sup>3</sup>	1 percent	Stamps	None specified	(*)	(*)	(*)	(*)
District of Columbia: Washington.....	Sales price <sup>4</sup>	2 percent <sup>6</sup>	Stamps	Recordation tax return			Yes	Up to \$1,000, up to 1 year
Illinois: Chicago.....	Sales price <sup>7</sup>	\$5 per \$5,000 <sup>8</sup>	Stamps	None specified	(*)	(*)	(*)	First offense: Not less than \$50, not more than \$300
Maryland: Counties: Anne Arundel..... Baltimore..... Howard..... Montgomery..... Prince George's.... All other counties. Cities: Baltimore.....	Sales price Sales price <sup>1</sup> Sales price Sales price Sales price Sales price Sales price Sales price <sup>1</sup>	1 percent <sup>9</sup> 1½ percent <sup>9</sup> 1 percent <sup>9</sup> ( <sup>9</sup> 1%) 1 percent ( <sup>9</sup> ) 1½ percent	(*)- Stamps Stamps Stamps Stamps Stamps Stamps Official receipt attached to deed	None specified None specified None specified None specified None specified None specified	(*) (*) (*) (*) (*) (*) (*)	(*) (*) (*) (*) (*) (*) (*)	None specified None specified None specified None specified None specified None specified None specified	
New York: New York City.....	Net sales price <sup>11</sup>	1 percent	Not specified	Real property transfer tax return		Yes		Up to \$1,000, up to 1 year
Ohio: Counties.....	Sales price <sup>1</sup>	Not to exceed 30 cents per \$100 <sup>12 13</sup>	Numbered receipt system	Real property conveyance fee statement of value			Yes	Misdemeanor
Pennsylvania: Local governments....  Cities: Philadelphia..... Pittsburgh.....	Sales price Sales price Sales price Sales price	½ to 1 percent 1 percent 1 percent	Not specified Stamps Stamps	Evidence of payment as provided by ordinance None required ( <sup>14</sup> )	(*) (*) (*)	(*) (*) (*)	(*) (*) (*)	None specified Not more than \$3,000 nor more than 30 days
South Carolina: Counties.....	Net Sales price <sup>1</sup>	55 cents per \$500	Stamps	None specified	(*)	(*)	(*)	Misdemeanor
Virginia: Cities and counties..	Sales price	1/3 of State document recording tax (hence 5 cents per \$100) <sup>15 16</sup>	As locally provided	None specified	(*)	(*)	(*)	None specified
Washington: Counties.....	Sales price <sup>17</sup>	Maximum 1 percent <sup>18</sup>	Stamps	Affidavit if required by local ordinance			Yes	None specified
West Virginia: Counties.....	Sales price <sup>1</sup>	55 cents per \$500	Stamps	Declaration of consideration or value			Yes	Misdemeanor

Note: "Sales price" means full amount of consideration, "net sales price" means sales price minus amount represented by assumed mortgages.

<sup>1</sup>Transfers of less than \$100 are exempt. <sup>2</sup>Any city within a county levying the tax may impose a city transfer tax at a rate of one-half that of the county. City tax then becomes a credit against the county tax. <sup>3</sup>If document does not set forth actual consideration, tax is computed on the estimated full value. <sup>4</sup>Relevance, if any, not indicated by data obtained. <sup>5</sup>The District of Columbia also levies a "speculator's tax" on the transfer of residential property containing 4 or fewer dwelling units. It has a sliding scale of rates, and applies if the property transferred was held for less than 3 years. Major exemptions to the tax are transfer of principal place of residence, and transfer of property certified to be free of structural defects for 2 years. <sup>6</sup>The 2 percent rate includes 1 percent on the buyer, via a deed recordation tax (minimum tax \$1), and, effective August 1, 1980, 1 percent on the seller, via a transfer tax. <sup>7</sup>Transfers of less than \$500 are exempt. <sup>8</sup>Tax is to be paid by grantee. <sup>9</sup>Local recordation taxes (additional to local transfer taxes shown above) are as follows: \$1.10 per \$500 - Allegany, Garrett, Wicomico; \$1.65 per \$500 - Baltimore, Calvert, Caroline, Dorchester, Kent, Prince George's, Queen Anne's, Worcester; \$2.20 per \$500 - Baltimore city, Montgomery; \$2.75 per \$500 - Harford; \$3.30 per \$500 - Charles, St. Mary's; \$3.50 per \$500 - Anne Arundel. <sup>10</sup>No realty transfer tax on residential property where consideration is less than \$25,000; tax is ½ of 1 percent where consideration ranges from \$25,000 to \$35,000; 1 percent where consideration exceeds \$35,000. Tax on unimproved property is 1 percent. No tax on all other nonresidential improved property where consideration is less than \$20,000; tax is ½ of 1 percent where consideration is \$20,000 to \$35,000; 1 percent where consideration exceeds \$35,000. Tax is from 2½ to 6 percent on land assessed as agricultural; rate dependent on length of agricultural classification. Transfers of real property rezoned for a more intensive use after July 1, 1971 are taxed at 6 percent. An additional real property recapture tax of \$3.70 per \$100 applies to the result, if any, of subtracting the assessed value and a flat \$8,000 from 45 percent of the sales price. <sup>11</sup>Consideration must exceed \$25,000. <sup>12</sup>As of 1978, 17 counties levy this tax. <sup>13</sup>When transfer is a gift, the tax is based on the estimated price real estate would bring in the open market. <sup>14</sup>Affidavit required if documentation does not define consideration. <sup>15</sup>Applies to first recordation only. <sup>16</sup>At present 65 counties and 27 cities levy this tax. <sup>17</sup>At present all 39 counties levy this tax. <sup>18</sup>Rate of tax must be established annually. A credit for the amount of tax paid on the transfer of a single-family residence is applicable to the tax due on subsequent transfer of the property within 9 months.



# APPENDIX A: LEGAL BASIS FOR ASSESSED VALUE OF REALTY, BY STATE: 1979 AND SUBSEQUENT PERIODS

State	Basis
Alabama.....	Fair and reasonable market value. Effective in 1978, the following percentages thereof apply for the types of realty indicated: Class 1, utilities used in business--30 percent. Class 2, property not otherwise classified--20 percent. Class 3, agricultural, forest, historic, and owner-occupied, single-family residential--10 percent. Class 3 property may, at the request of the owner, be valued on the basis of current use.
Alaska.....	Full and true value.
Arizona.....	Full cash value. The following percentages apply for the types of realty indicated: Class 1, flight property, railroads, producing mines--60 percent (52 percent effective July 3, 1980; railroads excluded). Class 2, property of other public utilities--50 percent (44 percent effective July 3, 1980). Class 3, commercial and industrial property--27 percent (25 percent effective July 3, 1980). Class 4, all agricultural realty--18 percent (16 percent effective July 3, 1980). Class 5, residential--15 percent (10 percent effective July 3, 1980). Class 6, not included above, and leased or rented solely for residential use--21 percent (18 percent effective July 3, 1980). Class 7, designated as historic--8 percent (effective July 3, 1980: this becomes class 8; new class 7, railroads and private car companies, at 34 percent). Values are adjusted before application of the tax rate in order to offset the effects of inflation. For 1979, values were divided by a factor of 1.15 in accordance with Laws 1979, Chapter 153, Section 6. Effective July 3, 1980, a dual assessment system applies.
Arkansas.....	20 percent of true and full or actual value.
California.....	25 percent of: "Full cash value" or "fair market value," defined as the amount of cash or its equivalent which property would bring if exposed for sale in the open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other and both with knowledge of all the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions upon those uses and purposes. <sup>1</sup> Effective January 1, 1981, 100 percent of "full cash value" replaces the 25 percent statutory assessment level; tax rates adjusted to prevent additional revenue being raised from this change.
Colorado.....	30 percent of actual value. <sup>2</sup>
Connecticut.....	Not exceeding 100 percent of true and actual or fair market value. All municipalities assess at a uniform rate of 70 percent of present true and actual value, subject to "equalized net grand list" for "guaranteed tax base program."
Delaware.....	True value in money.
District of Columbia....	Estimated market value. Property is classified into the following categories for application of differential rates: Class 1, owner occupied, improved residential real property of not more than five dwelling units or single unit condominiums. Class 2, not owner occupied property that would otherwise qualify as class 1. Class 3, real property not in classes 1 and 2.
Florida.....	Full cash value.
Georgia.....	40 percent of fair market value.
Hawaii.....	60 percent of fair market value.
Idaho.....	20 percent of market value. The 1 percent initiative approved in the 1978 general election requires all property to be re-appraised or indexed by June 1, 1980 with estimated market value as of December 31, 1978. This valuation is to be used for the tax year beginning January 1, 1980; in subsequent years, valuations may be adjusted to compensate for the rate of inflation not to exceed 2 percent per year.
Illinois.....	33-1/3 percent of fair cash value, except in counties of 200,000 or more which classify property. In any county which classifies, the highest classification may not be more than 2-1/2 times the lowest classification.
Indiana.....	Just valuation, defined by State as 33-1/3 percent of true cash value.
Iowa.....	100 percent of actual value; beginning in 1977 and biennially thereafter, such values subject to equalizing adjustments by the Department of Revenue on the basis of property category (agricultural, urban residential, rural residential, and commercial) and county. For 1979 adjustment factors ranged from -38 percent to +67 percent although most were positive. Beginning in fiscal 1978, rollback adjustments by property class Statewide were instituted. Rollback percentages for 1979 were as follows: Agricultural, 94.6706; residential, 64.3801; commercial and railroad, 88.9872; industrial and utility, no rollback.
Kansas.....	30 percent of fair market value in money.
Kentucky.....	Fair cash value.
Louisiana.....	Assessment at the following percentages of fair market value, for classifications of property as specified: Land--10 percent of fair market value. Improvements for residential purposes--10 percent of fair market value. Agricultural, horticultural, marsh and timberland--10 percent of use value. Public service property except land--25 percent of fair market value. Other property--15 percent of fair market value.
Maine.....	Just value.
Maryland.....	Full cash value; i.e., current value less an allowance for any inflation that exists. Such allowance is currently 50 percent plus an additional 5 percent for homesteads.
Massachusetts.....	Fair cash valuation. Property is grouped into four classes prior to application of tax rates.
Michigan.....	50 percent of true cash value.

See footnotes at end of table.

State	Basis
Minnesota.....	Percentages of market value, or limited market value if applicable, <sup>3</sup> as shown: Class 1, unmined iron ore--50 percent. Class 1a, low recovery iron ore--30 to 48.5 percent. Class 3, agricultural nonhomestead; seasonal residential for recreation purposes--25 percent for 1981 and 22 percent thereafter (formerly 30 percent). Class 3, tools, implements, and machinery affixed to public utility realty--33-1/3 percent. Class 3a, commercial seasonal recreational residential not used more than 200 days per year which include a homestead: First \$21,000 <sup>4</sup> market value--12 percent (formerly 16 percent); excess of market value over \$21,000--25 percent (formerly 30 percent). Prior to 1978 this property was included at class 3b. Class 3b, agricultural homestead; First \$21,000 <sup>4</sup> market value--12 percent (formerly 16 percent); excess of market value over \$21,000--25 percent (formerly 30 percent). Class 3c, all other homesteads: First \$25,000--16 percent; second \$25,000--22 percent; 28 percent on the remaining balance (formerly 18 percent of the first \$21,000, 30 percent of excess of market value over \$21,000). Class 3cc, homestead of blind person, paraplegic veteran or any person totally and permanently disabled; <sup>5</sup> Agricultural valued at 5 to 19 percent of the market value (formerly first \$28,000 market value, 5 percent; excess of market value over \$28,000, 25 percent). All other from 5 to 28 percent of market value (formerly first \$28,000 market value, 5 percent; excess of market value over \$28,000, 30 percent). Class 3d, nonresidential homestead, 4 or more units--38 percent (formerly 40 percent). Class 3dd, formerly included in class 3d, nonresidential homestead, 3 or fewer units--28 percent (formerly 32 percent). Class 3e, timberland--19 percent (formerly 20 percent). Class 4a, all other realty--43 percent. Realty included in this class was formerly considered class 4 (43 percent). Class 4b, realty that is unimproved, noncommercial and not included in any other class--40 percent. Property in this class was formerly included in class 4 (43 percent).
Mississippi.....	Cash value ("...in proportion to its value..." per State constitution).
Missouri.....	33-1/3 percent of true value in money.
Montana.....	By classes, as follows, percentages of market value unless otherwise indicated: Class 3, agricultural land--30 percent of productive capacity. Class 4, land and improvements (unless otherwise classified) and trailers and mobile homes used as permanent dwellings--8.55 percent (formerly 12 percent). The first \$35,000 of improvements to realty with appurtenant land owned by qualified individuals--12 percent multiplied by a percentage (0 to 90 percent) based on adjusted gross income (formerly all at 6 percent for this class). Class 5, property of cooperative rural electrical and telephone associations--3 percent. Class 10, centrally assessed utility allocations after deduction of locally assessed properties except those in classes 5 and 7--16 percent. Class 11, centrally assessed electric power companies' allocations and natural gas companies' allocations--12 percent; other specified centrally assessed utility allocations--15 percent. <u>Note:</u> Summaries of classes listed above omit minor items and description detail.
Nebraska.....	35 percent of actual value. Beginning January 1, 1981, all property must be valued at actual value.
Nevada.....	35 percent of full cash value.
New Hampshire.....	Full and true value in money.
New Jersey.....	True value. Taxable value is that percentage of true value, not lower than 20 percent or higher than 100 percent (the particular level being a multiple of 10), as is established by each county board of taxation.
New Mexico.....	Taxable value, set at 33-1/3 percent of market value.
New York.....	Full value.
North Carolina.....	True value in money. Historic property at 50 percent of true value upon application.
North Dakota.....	50 percent of true and full value in money (for most property).
Ohio.....	Taxable value, not to exceed 35 percent of true value in money.
Oklahoma.....	Not greater than 35 percent of fair cash value for the highest and best use for which such property was actually used, or was previously classified for use, during the calendar year next preceding the first day of January on which the assessment is made.
Oregon.....	100 percent of true cash value; i.e., market value as of assessment date. For assessment years beginning January 1, 1980, values are classified by counties into homestead and nonhomestead categories and are subject to equalizing adjustments by the Department of Revenue if Statewide increases exceed specified limits. Initial adjustments have been set at 84.2 percent of true cash value for homesteads and 87.6 percent of true cash value for all other property.
Pennsylvania.....	Actual value; but in fourth to eighth class counties, not to exceed 75 percent of actual value.
Rhode Island.....	Full and fair cash value, or a uniform percentage not exceeding 100 percent.
South Carolina.....	The following percentages of fair market value: All realty owned or leased by manufacturers and utilities--10.5 percent. Residences--not less than 4 percent. Agricultural realty (subject to specified exceptions)--4 percent. Realty owned or leased by transportation companies--9.5 percent. All other realty (includes leased agricultural, and commercial)--6 percent.
South Dakota.....	Not more than 60 percent of true and full value in money.
Tennessee.....	Percentages of actual value, as follows: Public utilities--55 percent. Industrial and commercial--40 percent. Farm and residential--25 percent.
Texas.....	True and full value in money ("...in proportion to its value..." and never at a value "greater than its fair cash value..." per State constitution).

See footnotes at end of table.



State	Basis
Utah.....	25 percent of reasonable fair cash value; mines are assessed at 30 percent (22 percent for 1979).
Vermont.....	Listed value which is 100 percent of appraisal value (the latter is fair market value). One percent of the listed value is entered in the grand list.
Virginia.....	Fair market value.
Washington.....	100 percent of true and fair value in money.
West Virginia.....	True and actual value, but four classes of property, each subject to a specified rate limit (other than for debt service) as follows, amounts per \$100 of assessed value: I--personalty--50 cents. II--owner-occupied residential property, including farms--\$1.00. III--all property outside municipalities, other than I and II--\$1.50. IV--all property inside municipalities, other than I and II--\$2.00.
Wisconsin.....	Full value which could ordinarily be obtained for the property at private sale.
Wyoming.....	Fair value in conformity with values and procedures prescribed by State Board of Equalization.
Puerto Rico.....	Actual and effective value by utilizing any of the methods and factors recognized with respect to property valuation and assessment so that the assessments for each of the different types of property may be uniform.
Virgin Islands.....	60 percent of estimated actual values.

<sup>1</sup>In accordance with Article XIII of the constitution, approved June 8, 1978, the base year value is the above full cash value as of the lien date in 1975, or the subsequent date when the property is purchased, newly constructed, or when a change in ownership (as defined according to law) has occurred. For each lien date after that conditioning establishment of base year value, the full cash value shall reflect the percentage change in cost of living, except that such value shall not reflect an increase in excess of 2 percent of full cash value on preceding lien date.

<sup>2</sup>Valuation for assessment for 1977 may not exceed 140 percent of average valuation of same property for years 1974 to 1976, excluding material changes. For 1978, valuation for assessment may not exceed 125 percent of valuation for prior year, excluding material change. Effective January 1, 1979, property may not be assigned a value exceeding 85 percent of average sale price of comparable properties.

<sup>3</sup>"Limited market value" is the value which incorporates the maximum amount of increase over the market value estimate for the immediately preceding year. An assessor may increase a previous year's market value estimate by up to 10 percent of that previous year's estimate or 1/4 of the total amount of increase from the previous year, whichever is greater. Limited market value concept to be phased out over two-year period with taxes payable in 1981 being based on full market value.

<sup>4</sup>Basic homestead component increased from \$13,000 to \$15,000 as of January 2, 1977. Subsequent annual adjustment is established via an index. As a result, the amount increased from \$15,000 to \$17,000 as of January 2, 1978. The component for taxes payable in 1980 was increased from \$17,000 to \$21,000. The homestead component for paraplegic veterans, the blind, or totally disabled was formerly \$28,000 as of January 2, 1977.

**APPENDIX B: LEGAL BASIS FOR ASSESSED VALUE OF TANGIBLE PERSONAL PROPERTY, BY STATE:  
1979 AND SUBSEQUENT PERIODS**

State <sup>1 2</sup>	Basis <sup>1</sup>
Alabama.....	Basically, percentages of fair and reasonable value in three classes, same as for realty. Stocks of goods of merchants at fair and reasonable value of the average amount of goods held during 12 months next preceding October 1. A fourth class of property composed of passenger automobiles and noncommercial pickup trucks is assessed at 15 percent.
Alaska.....	Full and true value same as realty. Business inventories may be assessed on basis of average monthly value or value as of January 1.
Arizona.....	Seven classes of personal property, same as realty, classes 1 to 7, with levels at 8 percent to 60 percent of market value (see Appendix A). Effective July 3, 1980, 8 classes with levels from 8 to 52 percent.
Arkansas.....	20 percent of usual selling price or average value (equivalent as to specified types of personalty, to true and full or actual value). Inventories assessed on average value.
California.....	25 percent of full cash value, except aircraft (assessed at market value), other minor exceptions.
Colorado.....	Unless otherwise specified, 30 percent of actual value. Stocks of merchandise at 5 percent of actual value. Livestock at 9 percent of actual value for 1979, 2 percent less annually till 1981, then 5 percent. Agricultural equipment, 10 percent in 1979, down to 5 percent, 1980 and thereafter.
Connecticut.....	Not to exceed 100 percent of true and actual or fair market value, but unless otherwise provided at 70 percent of same.
District of Columbia...	Full and true value in money.
Florida.....	Full cash value, same as realty; except inventories, assessed at 10 percent of just valuation; raw materials and goods in process at 1 percent of just valuation.
Georgia.....	40 percent of fair market value, same as realty. Motor vehicles in dealers' inventories assessed at 75 percent of the assessed value for other motor vehicles.
Idaho.....	20 percent of market value, same as realty. Personalty coming into State April 1 and after, at fractions of full assessed value. For the tax year beginning January 1, 1980, estimated market value as of December 31, 1978, same as realty (see Appendix A).
Illinois <sup>3</sup> .....	33-1/3 percent of fair cash value.
Indiana.....	33-1/3 percent of true cash value, same as realty. Inventory may be assessed at average value.
Iowa.....	Actual value, same as realty; inventory is assessed at average value.
Kansas.....	30 percent of fair market value, same as realty.
Louisiana.....	In accordance with fair market value "criteria" provided in statute. Stocks of merchandise at average inventory value. Plants and storage bases engaged in utilization of waste material assessed at 25 percent of actual value until December 31, 1980.
Maine.....	Just value, same as realty. Inventory assessable at average value.
Maryland.....	Personal property assessed at full cash value, without allowance for inflation (unlike realty). Stock in trade assessed on basis of lower of cost or market.
Massachusetts.....	Fair cash valuation, same as realty.
Michigan.....	50 percent of true cash value, same as realty.
Minnesota <sup>4</sup> .....	Percentages of market value, as specified, subject to amendments: Class 2a, mobile homes: Homestead, first \$17,000 market value--22 percent (formerly 25 percent). Excess of market value over \$17,000--36 percent (formerly 40 percent). Nonhomestead--40 percent. Class 3, structures on leased public lands in rural areas, leased agricultural real estate on exempt land--30 percent (formerly 31 percent). Class 3, tools, implements, and machinery affixed to public utility personalty--33-1/3 percent. Class 4, structures on leased public lands in urban areas and on railroad operating right of way; all other leased realty on exempt land; utility systems; billboards, advertising signs and devices--43 percent.
Mississippi.....	Cash value, same as realty.
Missouri.....	33-1/3 percent of true value in money, same as realty.
Montana.....	By classes, as follows, percentages of market value unless otherwise indicated: Class 1, certain mineral exploration interests--100 percent; certain annual net proceeds of mines and mining claims--100 percent of annual net proceeds less specified expenses. Class 2, annual gross proceeds of metal mines--3 percent of annual gross proceeds; annual gross proceeds of underground coal mines--33-1/3 percent of annual gross proceeds; annual gross proceeds of coal mines using the strip-mining method--45 percent of annual gross proceeds. Class 5, property of cooperative rural electrical and telephone associations except property specifically enumerated in class 7; air and water pollution control equipment--3 percent. Class 6, business inventories; unprocessed agricultural products--4 percent. Class 7, livestock; poultry; specified public utility property--8 percent. Class 8, agricultural tools and machinery; mining machinery and equipment; manufacturing machinery and equipment; motor-cycles; watercraft; aircraft; snowmobiles; tack; all machinery not elsewhere classified--11 percent. Class 9, autos, trucks, motor vehicles, furniture and fixtures used in commercial establishments--13 percent. Class 10, radio and television equipment; centrally assessed utility allocations after deductions of locally assessed properties except those in classes 5 and 7; coal and ore hauling; all other property not specifically classified--16 percent. <b>Note:</b> Summaries of classes listed above omit minor items and description detail.

See footnotes at end of table.

State <sup>1 2</sup>	Basis <sup>1</sup>
Nebraska.....	35 percent of actual value, same as realty. Beginning January 1, 1981, all property must be valued at actual value.
Nevada.....	35 percent of full cash value, same as realty. Business inventories and livestock are assessed at 28 percent of full cash value for fiscal 1979-80; 21 percent for 1980-81; 14 percent for 1981-82; 7 percent for 1982-83; exempt subsequent to 1982-83.
New Jersey.....	Depreciable personal property used in business assessed at not less than 20 percent of original cost to taxpayer. Personality of telegraph, telephone and messenger companies assessed on average ratio basis.
New Mexico.....	Taxable value, set at 33-1/3 percent of market value, same as realty. Specified valuation procedures.
North Dakota.....	50 percent of full and true value in money, same as realty. Taxable stocks of merchandise assessable on average inventory basis.
Ohio.....	The following percentages of true value in money: Certain merchants and manufacturers personalty--39 percent for 1979 returns; 37 percent for 1980; 35 percent for 1981 and subsequent years. Other personalty used in business--44 percent for 1979 returns; 42 percent for 1980; 40 percent for 1981; 38 percent for 1982; 36 percent for 1983; 35 percent for 1984 and subsequent years. Rural electric company property except motor vehicles--50 percent. Machinery of electric power plants--100 percent.
Oklahoma.....	35 percent of fair cash value, except stocks of goods assessed on basis of certain average values.
Oregon.....	100 percent of true cash value, same as realty, except that taxable ships and vessels with Oregon as home port registry are assessed at 40 percent of true cash value; those in intercoastal or foreign trade are assessed at 4 percent of true cash value.
South Carolina.....	Following percentages of fair market value: Business inventories, 6 percent; personalty owned or leased to transportation companies, 9-1/2 percent; personalty owned or leased to manufacturers and utilities, 10-1/2 percent; commercial fishing boats and power driven farm machinery, 5 percent; all other, 10-1/2 percent. Seven-year phase-in period for most categories. Fair market value of machinery and equipment of manufacturers determined from original cost less scheduled depreciation.
South Dakota.....	Effective January 1, 1979, all personal property not centrally assessed is exempt (formerly 60 percent of true and full value in money).
Tennessee.....	Tangible personalty, percentages of actual value, as follows: Public utilities--55 percent. Commercial and industrial--30 percent. Other--5 percent (however, any such property is presumed to have no value).
Utah.....	25 percent of reasonable fair cash value, same as realty; mining claims and machinery at 30 percent (22 percent for 1979).
Vermont.....	Listed value which is 100 percent of appraisal value (the latter is fair market value). One percent of the listed value of personalty is entered in the grand list. Business personalty is appraised, at the taxpayers option, at either 50 percent of cost (10 percent if fully depreciated) or net book value (10 percent if fully depreciated).
Washington.....	100 percent of true and fair value in money, same as realty, except as follows: Animals, birds, insects, crops at percentages of true and fair value declining from 40 percent in 1979 to zero in 1983. Equivalent phasing out applicable to business inventories via 10 percent tax credit, exemption 1983.
West Virginia.....	True and actual value, but four classes of property, same as realty, each subject to a specified rate limit.
Wisconsin.....	True cash value, subject to property tax offsets.

<sup>1</sup>In the following States, the full value legal basis specified in Appendix A, for realty also applies to tangible personalty: Kentucky, Maine, Massachusetts, Mississippi, New Hampshire, North Carolina, Oregon, Rhode Island, Texas, Virginia, Wyoming.

<sup>2</sup>The following States do not tax tangible personalty: Delaware, Hawaii, New York, Pennsylvania (South Dakota as of January 1, 1979).

<sup>3</sup>As of January 1, 1979 personal property will be exempt from tax. This change will begin with the 1980 tax roll. All uncollected taxes as of this date will still be due and payable.

<sup>4</sup>Classification scheme shown applies to values used for determining taxes payable in 1979. For taxes payable in 1980, there were some changes in the applicable percentages.

**APPENDIX C: PROVISIONS FOR ASSESSMENT OF PROPERTY FOR AGRICULTURAL, OPEN SPACE, AND  
ASSOCIATED EXPLICIT USES, BY STATE: 1979 and SUBSEQUENT PERIODS**

State	Provisions affecting assessed value applicable to explicitly specified uses	Remarks
Alabama.....	Use value assessment only...	Applies to Class III property only (agricultural, forest, historic, and single family, owner-occupied properties). Owner must request current use assessment.
Alaska.....	Deferred taxation.....	Upon application, farm use lands may be assessed at full and true value for farm use. Recapture provision is an amount equal to the additional tax at the current mill levy together with 8 percent interest for the preceding seven years.
Arkansas.....	Use value assessment only...	Current use provision applies to agricultural, farm, or timber use land; application required.
California.....	Use value assessment only...	Basis for "full value" of owner-occupied land zoned and exclusively used for single-family residential or agricultural purposes; and for parcels of 10 or more acres each, used for 2 or more years for nonprofit golf course purposes (value of any mines or minerals involved is added). Assessor must also consider any applicable restrictions in certified local coastal programs, effective January 1, 1977.
	Contracts and agreements....	Basis for "full value" of open space land subject to specified restrictions and uses.
Colorado.....	Use value assessment only...	Use value based on productive capacity during reasonable period, capitalized at 11.5 percent, effective 1976.
Connecticut.....	Use value assessment only (sometimes classified as deferred taxation, because of conveyance tax cited).	Farm, forest, open space land sold within 10 years of initial acquisition or of such classification (in the case of forest or farm land) subject to conveyance tax ranging from 10 percent of sales price if sold in first year to 1 percent thereof in 10th year. Specified exemptions.
Delaware.....	Use value assessment only...	Land of not less than 5 acres, used for agricultural, horticultural, or forest purposes for 2 previous years, may be valued on the basis of such use; application required.
District of Columbia....	Use value assessment only...	Current use assessment is available for designated historic properties if such assessment is less than market value.
Florida.....	Use value assessment only...	Upon application, land may be classified as agricultural land and assessed solely on the basis of its agricultural use. A sales price three or more times an agricultural use assessed value creates presumption that land is not used primarily for bona fide agricultural purposes. Owners of environmentally endangered lands or lands used for outdoor recreational or park purposes may convey their development rights to the county or an internal improvement trust fund in return for assessments incorporating such lack of development rights. Recapture provision includes tax differential plus 6 percent interest per year.
	Contracts and agreements....	
Hawaii.....	Deferred taxation.....	Affects land dedicated to agricultural or ranching use in agricultural, rural, conservation, and urban districts. Assessment is on the basis of such use or 50 percent of its assessed value in the case of agricultural districts. Other provisions relate to land dedicated to golf course and single family, owner-occupied residential use.
	Contracts and agreements....	
Idaho.....	Use value assessment only...	Land actively devoted to agriculture which meets specified criteria may be classified as agricultural property; excludes land used for pleasure or part of a platted subdivision.
Illinois.....	Deferred taxation.....	Upon application, real property used for farming or agricultural purposes shall be valued at 33-1/3 percent of fair cash value based upon such agricultural use. Two standards available under which property may qualify as agricultural. Recapture provision includes 5 percent interest on roll-back amounts.
Indiana.....	Use value assessment only...	Land shall be assessed as agricultural land as long as it is devoted to agricultural use.
Iowa.....	Use value assessment only...	Productivity and net earning capacity constitute the valuation basis, except that dwellings on agricultural realty are assessed on a market value basis, effective with 1981 assessments.
Kansas.....	Deferred taxation.....	Agricultural use land may be assessed on the basis of actual or potential agricultural income or productivity.
Kentucky.....	Deferred taxation.....	Agricultural or horticultural lands meeting specified gross income levels in 3 of 5 preceding years may be assessed according to the land's value for agricultural or horticultural use. Upon change in use, deferred taxes for immediately preceding 2 tax years become due.
Louisiana.....	Use value assessment only...	Agricultural, horticultural, marsh, or timber land may, upon application, be valued at 10 percent of use value assessment. Buildings of historical architectural importance may be similarly valued on a use basis but with a deferred tax provision.
	Contracts and agreements....	Agreements refer to reforestation contracts.
Maine.....	Deferred taxation.....	Upon application, cropland, farmland, farm woodland, open space land, orchard land, and pastureland may be valued on current use value for agricultural or open space purposes. In addition, a tree growth tax, amended February 9, 1978, provides for productivity based assessment, at specified value levels, for forest land.
Maryland.....	Deferred taxation.....	Land actively devoted to farm or agricultural use are assessed on the basis of such use. Conversion to other use subjects land to a development tax equal to 10 percent of the difference between the agricultural and nonagricultural use assessments.
	Contracts and agreements....	Easements to a government, or to the Nature Conservancy, which place limitations on use are reflected in valuations.

See footnotes at end of table.

State	Provisions affecting assessed value applicable to explicitly specified uses	Remarks
Massachusetts.....	Deferred taxation.....	Local option permits assessment of agricultural or horticultural lands based upon such use. Land must be at least 5 acres and have been in benefited use category for 2 immediately preceding years. Conveyance tax levied if land sold for other than specified use within 10 years; if land is disqualified from benefited use assessment, roll-back taxes are levied. Under specified conditions, city or town has limited right of first refusal when such property is offered for sale.
	Contracts and agreements....	Conservation restrictions.
Michigan.....	Contracts and agreements....	State-financed, also related to household income (circuit breaker type) effective 1974. Farm-land or open space development rights agreements with minimum 10-year term.
Minnesota.....	Deferred taxation.....	Upon application, qualifying agricultural real estate of more than 10 acres and qualifying real estate devoted to golf or skiing recreational use of more than 5 acres may be assessed on a use basis. Deferred taxes are payable for prior 3 years of use assessment without interest.
Missouri.....	Use value assessment only...	Available to agricultural or horticultural land in such use for 5 preceding years, with average annual gross sales of \$2,500.
Montana.....	Deferred taxation.....	Must meet specified conditions regarding use and size or income. Roll-back tax provision may include deferred taxes up to 4 preceding years of use assessment.
Nebraska.....	Deferred taxation.....	Land within an agricultural use zone which is used exclusively for agricultural purposes may be assessed on the basis of such use. If eligibility ends, deferred tax on any difference in values for 5 years plus interest at 6 percent.
Nevada.....	Deferred taxation.....	Applies to agricultural or open space land. Deferred tax provision may extend up to 84 months prior to change in use; interest added at 6 percent per year.
New Hampshire.....	Deferred taxation.....	Qualifying farm land, forest land, wetland, recreation land, flood plain land, or wild land may be assessed based on current use values established by the current use advisory board. A land use change tax is levied at the rate of 10 percent of the full and true value of the land changed to other than open space use.
	Contracts and agreements....	Current use assessment may also be obtained for qualifying land through the owner's granting of discretionary easements to a city or town for a minimum 10-year term. Release only for cases of extreme personal hardship with penalties specified.
New Jersey.....	Deferred taxation.....	Agricultural or horticultural land of 5 or more acres and in such use for 2 preceding years may be assessed based on such use; application required. Roll-back provision may include up to 2 years of deferred taxes.
New Mexico.....	Use value assessment only...	Basis is productive capacity.
New York.....	Deferred taxation.....	Land of 10 or more acres in size in an agricultural district and generating \$10,000 or more in agricultural products may be entitled to an agricultural assessment. Newly constructed structures on agricultural or horticultural lands subject to exemption for up to 10 years. Eligible forest land must be committed to forest crop production for 10-year period.
	Contracts and agreements....	
North Carolina.....	Deferred taxation.....	Applies to agricultural or horticultural parcels of 10 acres or more; gross income from products grown therein must average \$1,000 or more annually for 3 preceding years. Qualifying forest land must be of at least 20 acres in size. Deferred taxes payable upon change in use may extend up to 3 preceding years plus interest.
North Dakota.....	Use value assessment only...	Land classified as agricultural prior to annexation retained in that classification until use changes. Value must be uniform with that of adjoining agricultural land not annexed.
Ohio.....	Deferred taxation.....	Requirements include specified minimum size, agricultural use 3 preceding years, and application. Deferred taxation may extend up to 4 preceding years of use assessment.
Oklahoma.....	Use value assessment only.	
Oregon.....	Deferred taxation.....	Agricultural lands, when devoted exclusively to farm use, shall be valued on the basis of such farm use. Deferred tax provision extends up to 10 preceding years and includes 6 percent interest. Deferred taxation does not apply where use changes from unzoned land used for farm use to a farm use zone.
Pennsylvania.....	Deferred taxation.....	Upon application, qualifying agricultural land, agricultural reserve, and/or forest reserve may be given preferential use assessments. Requirements include 10-acre minimum size and for agricultural land, an anticipated annual gross income of \$2,000 and 3 preceding years of benefited use. Roll-back taxes may extend for up to 7 previous tax years and 6 percent interest.
	Contracts and agreements....	Counties may covenant with owners of farm or forest land for preservation of land in farm, forest, water supply, or open space use. Such agreements may be negotiated to conform with more recent provisions of preferential use assessment described above.
Rhode Island.....	Deferred taxation.....	Farm, forest, or open space land. Roll-back tax provision applicable for current year and 2 preceding years of use value assessment.
South Carolina.....	Deferred taxation.....	Qualifying agricultural real property used for agricultural purposes is assessed at specified percentages of fair market value for such agricultural purposes. Timber land may qualify for such agricultural use assessment. Roll-back provision may include deferred taxes for current year and immediately preceding 5 years.
South Dakota.....	Use value assessment only...	Land devoted to agricultural use shall be classified and taxed as agricultural land without regard to the zoning classification which it may be given.
Tennessee.....	Deferred taxation.....	Qualifying lands include agricultural of at least 15 acres, forest of at least 15 acres, and open space of at least 3 acres. Roll-back taxes extend for up to 3 years for agricultural and forest lands and up to 5 years for open space lands. Special provision is made for assessment of lands with open space easements.

See footnotes at end of table.



State	Provisions affecting assessed value applicable to explicitly specified uses	Remarks
Texas.....	Deferred taxation.....	Upon application, land owned by natural persons and used for agricultural purposes for the 3 years immediately preceding may be assessed based upon such use. Lands restricted to recreational, park, or open space use may be assessed based upon such restricted use; land must be of 5 acres in size and restriction must be for a minimum of 10 years. Roll-back provision for agricultural lands extends for up to 3 preceding years; for recreational lands up to 5 preceding years plus current year.
Utah.....	Deferred taxation.....	Land actively devoted to agricultural use may be assessed based upon such use if of at least 5 contiguous acres, generating gross income of at least \$1,000 per year, and having been devoted to such use for the 2 immediately preceding years; application required. Waivers of acreage and income limitations possible. Roll-back taxes may extend up to 5 years of benefited use.
Vermont.....	Deferred taxation.....	Agricultural land and managed forest land meeting specified criteria are eligible for use value appraisal. Upon development, land use change tax is levied in the amount of 10 percent of the full fair market value of the changed land determined without regard to the use value appraisal. Land may be withdrawn from use value assessment and payment of land use change tax deferred until development occurs.
	Contracts and agreements....	A municipal corporation may enter into contracts with owners of agricultural, forest land, industrial or commercial real and personal property for the purpose of fixing and maintaining the valuation of such property on the grand list; contracts may also be made for fixed rates, fixed annual amounts, or fixed percentages of the annual tax.
Virginia.....	Deferred taxation.....	Any county, city, or town which has adopted a land use plan may by ordinance provide for the use value assessment of real estate used for agricultural, horticultural, forest, or open space purposes. Roll-back tax provision includes current year and up to 5 immediately preceding years.
Washington.....	Deferred taxation..... Contracts and agreements....	Open space land, farm and agricultural land, and timber land (of at least 5 acres and excluding timber value) may qualify for current use assessment. Land classified on a current use basis must continue to be so classified for a period of 10 years. If the owner, after 8 years, requests withdrawal from current use assessment, roll-back taxes for 7 years plus interest at the statutory rate are payable at the end of 2 additional years. If a change in use occurs before the end of the 10-year period, the aforementioned roll-back taxes and interest are due plus an additional 20 percent of the roll-back amount.
West Virginia.....	Use value assessment only...	
Wisconsin.....	See remarks.....	Constitutional amendment, approved April 2, 1974: Taxation of agricultural and undeveloped land need not be uniform with that of each other or with that of other realty. Effective May 19, 1978, income tax credits and refunds available to eligible owners of qualifying farmland 35 or more acres in size, applicable to specifically defined "excessive property taxes," maximum such excessive amount \$6,000.
Wyoming.....	Use value assessment only...	Minimum of 2 previous years in benefited use.

Terms (based on review of applicable legal provisions):

Deferred taxation--Change from benefited (explicitly specified) use activates tax on value differences, for specified time periods, plus any interest specified.

Contracts and agreements--Agreements providing for limitations on use over specified time periods, as part of explicitly specified use value assessment determination.

## APPENDIX D: SELECTED REFERENCES

### Part 1. Official Recurring Reports (From State Government Agencies Unless a Local Government Source is Specified)

Note: Reports are not limited to ratio study coverage. Latest report in Bureau files is listed. Frequency annual unless otherwise indicated.

#### ALABAMA

Department of Revenue, Montgomery 36130. Assessment Sales Ratio Study 1968-69, May 1970.

#### ALASKA

Department of Community and Regional Affairs, Division of Local Government Assistance, Juneau 99801. Alaska Taxable 1978, January 1979.

#### ARIZONA

Department of Revenue, Division of Property and Special Taxes, Central Information Services Section, Phoenix 85007. Abstract of the Assessment Roll 1979, January 1980.

#### ARKANSAS

Department of Commerce, Public Service Commission, Little Rock 72205. Biennial Report of the Tax Division for Years 1977-78, January 1979.

Department of Commerce, Public Service Commission, Little Rock 72205. Eleventh Biennial Report (1977-78) of the Assessment Coordination Division, January 1979.

#### CALIFORNIA

Office of State Controller, Sacramento 95814. Annual Report of Assessed Valuation of the Counties of California as of September 1979, for the Fiscal Year 1979-80.

State Board of Equalization, Sacramento 95808. 1978-79 Annual Report for the Year Ending June 30, 1979, December 1979.

#### COLORADO

Department of Local Affairs, Division of Property Taxation, Denver 80203. Ninth Annual Report, January 1980.

#### CONNECTICUT

Office of the Commissioner of Revenue Services, Hartford 06115. Information Relative to the Assessment and Collection of Taxes in 1978, November 1979.

Department of Revenue Services, Hartford 06115. 1978 Sales/Assessment Ratio Study.

#### FLORIDA

Department of Revenue, Tallahassee 32301. Florida Ad Valorem Valuation and Tax Data - 1978.

#### GEORGIA

Department of Audits, Atlanta 30334. Current Equalized Adjusted School Property Tax Digest, March 1980. Data not published but available.

#### HAWAII

Department of Taxation, Honolulu 96809. Annual Report 1978-79, December 1979.

#### IDAHO

Department of Revenue and Taxation, Boise 83722. Thirty-fifth Annual Report of the State Tax Commission for the Year Ended June 30, 1979, December 1979.

#### ILLINOIS

Department of Local Government Affairs, Springfield 62706. Illinois Property Tax Statistics 1977.

Department of Local Government Affairs, Springfield 62706. Assessment/Sales Ratio Study Findings 1977.

#### IOWA

Department of Revenue, Des Moines 50319. Summary of Real Estate Assessment/Sales Ratio Study 1978.

#### KANSAS

Department of Revenue, Division of Property Valuation, Topeka 66612. Real Estate Assessment Sales Ratio Study 1979.

Department of Revenue, Division of Property Valuation, Topeka 66612. Statistical Report of Property Assessment and Taxation for the Year 1978.

#### LOUISIANA

State Tax Commission, Baton Rouge 70804. Nineteenth Biennial Report for Years 1978-79, May 1980.

#### MAINE

Bureau of Taxation, Property Tax Division, Augusta 04330. Municipal Valuation Return - 1979, April 1980.

#### MARYLAND

Department of Assessments and Taxation, Baltimore 21201. Thirty-fifth Annual Report for the Year - 1978, January 1979.

#### MASSACHUSETTS

Department of Corporations and Taxation, Boston 02204. Annual Report 1977-78, December 1978.

#### MICHIGAN

Department of Treasury, State Tax Commission, Lansing 48922. 1977 State Equalized Valuation and Average Tax Rate Data, April 1978.

Department of Treasury, State Tax Commission, Lansing 48922. 1980 Factors, Assessed Valuations and Units Portion of State Equalized Valuations.

#### MINNESOTA

Department of Revenue, Local Government Aids and Analysis Division, St. Paul 55145. 1978 Real Estate Assessment/Sales Ratio Study-Report Number Eight, August 1979.

#### MISSISSIPPI

Mississippi State Tax Commission, Jackson 39205. Service Bulletin-Property Assessments and Ad Valorem Taxes for the Calendar Years of 1977 and 1978.

#### MISSOURI

State Tax Commission, Jefferson City 65102. Thirty-Third Annual Report of the Proceedings and Decisions of the Missouri State Tax Commission for the Year Ending December 31, 1978, June 1979.

State Tax Commission, Jefferson City 65102. 1979 Ratio Study, February 1980.

#### MONTANA

Department of Revenue, Helena 59601. Biennial Report for the Period July 1, 1976 - June 30, 1978.

Department of Revenue, Property Assessment Division, Mass Appraisal Bureau, Helena 59601. Sales Ratio Study, August 1979.

#### NEBRASKA

Department of Revenue, Lincoln 68509. 1977 Annual Report, 1977.

#### NEVADA

Department of Taxation, Division of Assessment Standards, Carson City 89701. Report of the 1979-80 Ratio Study, January 1980.

#### NEW HAMPSHIRE

Department of Revenue Administration, Concord 03301. 1979 Assessment Sales Ratio Studies Equalization Process.

## NEW JERSEY

Department of Treasury, Division of Taxation, Trenton 08625. Certification of Table of Equalized Valuations - 1975, October 1975.

## NEW MEXICO

Taxation and Revenue Department, Property Tax Division, Santa Fe 87509. Annual Report for 1979 Tax Year, January 1980.

## NEW YORK

Board of Equalization and Assessment, Albany 12223. State Equalization Rates for 1978 Assessment Rolls of Cities, Towns and Villages, January 1980.

## NORTH DAKOTA

North Dakota Tax Department, Bismarck 58505. 1979 Statistical Report-1978 Property Taxes Levied and 1979 Property Valuation.

## OHIO

Department of Tax Equalization, Columbus 43215. 1979 Sales Ratio Study.

## OKLAHOMA

Oklahoma Tax Commission, Ad Valorem Tax Division, Oklahoma City 73194. 1978 Use Value Ratio Study, August 1979.

## OREGON

Department of Revenue, Assessment and Appraisal Division, Salem 97310. Ratio and Assessment Data-1977, September 1977.

## PENNSYLVANIA

Tax Equalization Board, Harrisburg 17108. Thirty-first Annual Certification - 1978 Market Values, June 1979.

## RHODE ISLAND

Department of Community Affairs, Division of Housing and Government Services, Tax Equalization Section, Providence 02903. 1979 Annual State Report on Local Government Finances and Tax Equalization, March 1980.

## SOUTH CAROLINA

State Tax Commission, Columbia 29214. Sixty-fifth Annual Report for the Fiscal Year Ended June 30, 1979, September 1979.

## SOUTH DAKOTA

Department of Revenue, Property Tax Division, Pierre 57501. Twenty-second Annual Report for Calendar 1979 - Assessment and Sales Information.

## TENNESSEE

State Board of Equalization, Nashville 37217. 1979 Tax Aggregate Report, April 1980.

## UTAH

State Tax Commission, Division of State Assessed Property, Salt Lake City 84109. 1979 Statistical Study of Assessed Valuation, May 1980.

State Tax Commission, Local Valuation Division, Salt Lake City 84109. 1979 Assessment: Sales Analysis of Locally Assessed Real Property.

## VERMONT

Agency of Administration, Department of Taxes, Montpelier 05602. Biennial Report of the Commissioner of Taxes for the Term Ending June 30, 1976, January 1977.

## VIRGINIA

Department of Taxation, Richmond 23282. 1977 Virginia Assessment Sales Ratio Study, February 1979.

## WASHINGTON

Department of Revenue, Property Tax Division, Olympia 98504. 1979 Ratio Study Summary Results, April 1980.

## WEST VIRGINIA

State Tax Commission, Charleston 25305. Study of Property Valuations as They Relate to Levies Paid for the Support of Schools in West Virginia for the Tax Year 1979.

## WISCONSIN

Department of Revenue, Bureau of Local Financial Assistance, Division of State and Local Finance, Madison 53702. Town, Village and City Taxes 1978 - Taxes Levied in 1978 - Collected in 1979 - Bulletin 178, 278, 378 combined.

Department of Revenue, Assessment Practices Division, Madison 53702. 1979 Detailed Sales Study, Unpublished but available.

## WYOMING

Department of Revenue and Taxation, Ad Valorem Tax Division, Cheyenne 82002. 1979 Annual Report, November 1979.

## Part 2. Reports of Special Commissions or Other Agencies

## NEW JERSEY

New Jersey State Chamber of Commerce, Newark 07102. 1977 Property Tax Data; Tax Rates, Levies and Assessment Ratios.

## Part 3. Selected General References

The list is indicative, not exhaustive. In addition to its specifics, publications of particular agencies may be helpful. The agencies include:

Advisory Commission on Intergovernmental Relations, Washington, D.C. 20575

Federation of Tax Administrators, 444 North Capitol Street, N.W., Washington, D.C. 20001

International Association of Assessing Officers, 1313 E 60 Street, Chicago, Illinois 60637

National Tax Association-Tax Institute of America, 21 E State Street, Columbus, Ohio 43215

Tax Reform Research Group, 133 C Street, S.E., Washington, D.C. 20003

Specific references follow:

1. Aaron, Henry, Who Pays the Property Tax?, Washington, D.C., The Brookings Institution, 1975, 110 pages.

2. Abt Associates, Property Tax Relief Programs for the Elderly: A Compendium Report, Washington, D.C., 1975.

3. Adams, Jack E. and Bruce Lindeman, "Speculation in Undeveloped Land," Appraisal Journal, April 1979, pp. 218-226.

4. Barrows, Richard L. and Bruce A. Prenguber, "Transfer of Development Rights: An Analysis of a New Land Use Policy Tool," American Journal of Agricultural Economics, November 1975, pp. 549-557.

5. Behrens, John O., "Again Some Facts for a Tax under Attacks," Revenue Administration - 1979, Federation of Tax Administrators, Washington, D.C., 1979, pp. 201-207.

6. Behrens, John O., "Property Tax Administration: Use of Assessment Ratios," Journal of Education Finance, Vol. 3, No. 2, 1977, pp. 158-174.

7. Behrens, John O., "Property Taxes and Property Values: What's New About Base, Burden, and Other Mysteries," Public School Finance Programs, 1978-79, compiled and edited by Esther O. Tron, U.S. Government Printing Office, Washington, D.C., 1980, pp. 22-41.

8. Bezeau, Lawrence M., "Recent Developments in Property Assessment and Taxation in Canada," Journal of Education Finance, pp. 175-186.

9. Blake, Daniel R., "Property Tax Incidence: An Alternate View," Land Economics, Vol. 55, No. 4, November 1979, pp. 521-531.

10. Borst, Richard A. and John F. Thompson, Jr., "Computer-assisted Tax Equalization: A Model Project," Revenue Administration - 1979, Federation of Tax Administrators, Washington, D.C., 1979, pp. 207-212.

11. Brandon, Robert M., Jonathan Rowe, and Thomas H. Stanton, Tax Politics, How They Make You Pay and What You Can Do About It, Pantheon Books, New York, New York, 1976, 297 pages.

12. Church, Albert M. and Robert H. Gustafson, Statistics and Computers in the Appraisal Process, International Association of Assessing Officers, Chicago, Ill., 1976, 160 pages.

13. Colwell, Peter F., "A Statistically Oriented Definition of Market Value," Appraisal Journal, January 1979, pp. 53-58.

14. Colwell, Peter F., and C.F. Sirmans, "Area, Time, Centrality and the Value of Urban Land," Land Economics, Vol. 54, No. 4, November 1978, pp. 514-519.
15. Correll, Mark R., Jane H. Lillydahl, and Larry D. Singell, "The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space," Land Economics, Vol. 54, No. 2, May 1979, pp. 201-217.
16. Dasso, Jerome, Computerized Assessment Administration, International Association of Assessing Officers, Chicago, Ill., 1974, 231 pages.
17. Entretien, Henry C., Jr., "Are We Really Seeking Market Value?" Appraisal Journal, July 1980, pp. 428-431.
18. Fishkind, Henry H., Jerome W. Milliman, and Richard W. Ellison, "A Pragmatic Econometric Approach to Assessing Economic Impacts of Growth or Decline in Urban Areas," Land Economics, Vol. 54, No. 4, November 1978, pp. 442-460.
19. Gipe, George W., "Understanding Multiple Regression Analysis," Assessors Journal, December 1975, pp. 1-14.
20. Gipe, George W., "Analysis of Residuals to Improve Multiple Regression Equations," Assessors Journal, April 1974, pp. 9-16.
21. Gloudemans, Robert J., "The Record of Assessment Performance in the United States," International Property Assessment Administration 8, International Association of Assessing Officers, Chicago, Ill., pp. 255-264.
22. Gold, Steven David, Property Tax Relief, Lexington Books, D.C. Heath and Co., Lexington, Massachusetts, and Toronto, 1979.
23. Healy, Robert G. and James L. Short, "New Forces in the Market for Rural Land," Appraisal Journal, April 1978, pp. 185-199.
24. Holland, Daniel M., ed., The Assessment of Land Value, Committee on Taxation, Resources, and Economic Development, University of Wisconsin Press, Madison, Milwaukee, and London, 1970, 292 pages.
25. Ihlanfeldt, Keith Ray, "The Incidence of the Property Tax on Homeowners: Evidence from the Panel Study of Income Dynamics," National Tax Journal, Vol. 32, No. 4, December 1979, pp. 535-541.
26. International Association of Assessing Officers, Analyzing Assessment Equity, Techniques for Measuring and Improving the Quality of Property Tax Administration, IAAO, Chicago, Ill., 1977, 216 pages.
27. International Association of Assessing Officers, Improving Real Property Assessment, A Reference Manual, written by Richard R. Almy, Robert J. Gloudemans, Robert C. Denne, and Stuart W. Miller, IAAO, Chicago, Ill., 1978, 444 pages.
28. Land Data Systems Now, Proceedings of Second MOLDS Conference, North American Institute for Modernization of Land Data Systems, Washington, D.C., 1979, 283 pages.
29. Levin, Betsy, "New Legal Challenges in Educational Finance," Journal of Education Finance, Vol. 3, No. 1, 1977, pp. 54-69.
30. Manvel, Allen D., Trends in Value of Real Estate and Land: 1956 to 1966, Research Report No. 12, Washington, D.C.: National Commission on Urban Problems, 1968.
31. Milgram, Grace, The City Expands: A Study of the Conversion of Land from Rural to Urban Use - Philadelphia, 1945-62, Philadelphia: University of Pennsylvania, Institute for Environmental Studies, 1967.
32. Montgomery, David and James Tait, "Development of a Simplified Market Data Approach for Mass Appraisal," International Property Assessment Administration 8, International Association of Assessing Officers, Chicago, Ill., 1976, pp. 151-173.
33. Moyer, D. David, Land Information Systems: An Annotated Bibliography, North American Institute for Modernization of Land Data Systems, Washington, D.C., 1978, 195 pages.
34. Moyer, D. David and Kenneth Paul Fisher, Land Parcel Identifiers for Information Systems, American Bar Foundation, Chicago, Ill., 1973.
35. National Association of Realtors, Existing Home Sales: 1979, Washington, D.C., 1980.
36. National Tax Association-Tax Institute of America, "Equity through the Administrative and Judicial Review of Original Assessments," Report of Property Taxation Committee, in Proceedings of the Sixty-Ninth Annual Conference on Taxation, Columbus, Ohio, 1977, pp. 114-122.
37. Oldman, Oliver and Mary Miles Teachout, "Valuation and Appeals under a Separate Tax on Land," Assessors Journal, March 1980, pp. 43-57.
38. Paul, Diane B., The Politics of the Property Tax, Lexington Books, D.C. Heath and Co., Lexington, Mass., Toronto, and London, 1975, 158 pages.
39. Pomp, Richard D., "What is Happening to the Property Tax?" Assessors Journal, June 1980, pp. 107-126.
40. Proceedings of North American Conference, North American Institute for Modernization of Land Data Systems, Washington, D.C., 1975, 461 pages.
41. Reinmuth, James E., "Innovative Techniques for Measuring Assessment Performance," International Property Assessment Administration 8, International Association of Assessing Officers, Chicago, Ill., 1976, pp. 175-185.
42. Smith, David V., "An Appraiser Looks at Multiple Regression," Appraisal Journal, April 1979, pp. 248-252.
43. Smith, T. Reynolds, "Linear Regression Analysis of Sales Data," Assessors Journal, July 1970, pp. 3-9.
44. Stocker, Frederick D., John H. Bowman, Richard L. Lucier, and William H. Oakland, Fiscal Options for the State of Ohio, Volume 1: Background and General Issues, Academy for Contemporary Problems, Columbus, Ohio 43201, 1980.
45. Swartz, T.R., and Lawrence C. Marsh, "A Self-assessed Property Tax Revisited Once Again," Proceedings of the Seventieth Annual Conference on Taxation (1977: Louisville), National Tax Association-Tax Institute of America, Columbus, Ohio, 1978, pp. 191-199.
46. Thomas, James G., "The Influence of Environmental Legislation on the Appraisal Process," Appraisal Journal, January 1978, pp. 26-31.
47. U.S. Bureau of the Census, Taxable Property Values and Assessment/Sales Price Ratios, Volume 2, 1977 Census of Governments, Washington, D.C., November 1978, 294 pages.







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